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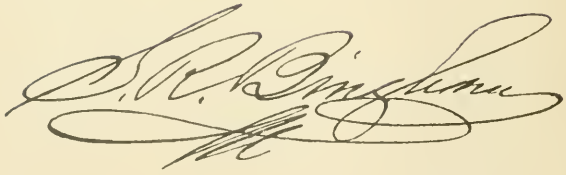

# TRANSACTIONS

OF THE

# Illinois State Dental Society

AT THE

## Thirty-Second Annual Meeting,

HELD AT

SPRINGFIELD, MAY 12 TO 15, 1896.

Publication Committee:

LOUIS OTTOFY, A. W. HARLAN, E. NOYES.

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# Addresses, Essays and Discussions.

## PRESIDENT'S ANNUAL ADDRESS.

By W. A. Stevens, M. D., Chicago.

*Members of the Illinois State Dental Society:* With gratitude in our hearts to our Heavenly Father, we meet to-day in the capital city of this State for the purpose of holding our annual gathering. Our meeting together seems like coming home; and it is with that feeling of attachment due to this Society I greet you all to this our Thirty-second Annual Session. It seems but a day since we were gathered together in the city of Galesburg; and the recollections of our labors are green in our memories, and the surprise you gave me by electing me to the presidency is not forgotten.

This annual session reminds us that another year is gone to be numbered with the past, and brings us so much nearer to the goal of our existence; let us rejoice in the present; let us be thoughtful with regard to the future and ever bear in mind that life is short, and in it there is much to do, and we must press onward to the performance of the duties that belong to us, and leave behind no uncanceled obligations for the advancement of our chosen profession, for the benefit of those who come after us, and especially those who seek relief at our hands.

One member of this society has passed within the vale since our last session, Dr. E. B. Call, of Peoria. And another, though not a member of this society, whose familiar face and voice will not be seen or heard by us again on this side of the vale that separates the mortal from the immortal, one who had as much interest in this society and its prosperity as if he were a member of it, in whose place of business it was organized thirty-two years ago, who was the first to suggest to the house of Jones, White & McCurdy, the advisability of establishing a branch house for dental supplies in what was then thought, by many in the east, to be the "wild west" and in the city of Chicago, where they imagined the wild buffalo and

untamed Indian still followed their paths and trails through its streets, sustained in his opinions by only one member of that firm, S. S. White, he came west and established a branch house for dental supplies, which largely through his energy, zeal and integrity, has grown to be second (only to its parent) in the world—S. R. Bingham, who on the first day of February, 1896, stepped into the country from "whose bourne no traveler returns," whose life of integrity is worthy of imitation. His hope for a bright life beyond this mortal existence was so strong, I believe he would have preferred that the last respects paid to his memory should have been as far as possible removed from the funereal. The blinds open, the curtains raised that the sunlight of heaven might fill the room, the flowers he loved so well scattered in profusion around him, the music as far from the dirge as possible, and a crown of roses hung at the door in place of the emblem of grief, his strong belief in changing from mortal to immortal existence was the end of sorrow, suffering and grief. He would have preferred songs of joy and exultation.

The subject of education before entering upon the study of dentistry was ably presented to you ten years ago by Dr. Gilmer in his address to this association, but I wish to present a few statistics for your consideration, as to the present educational standard, as compared with other professional callings. Reports from twenty-nine institutions of learning showed out of 1,473 theological students 985 were college graduates; out of 2,659 law students 968 had completed a four years' college course; of 3,110 medical students, 990 had taken the regular literary course, giving us .668 per cent of theological students who had graduated in science and art; .364 per cent of law students and .239 per cent of medical students, who had a similar preparatory training. I have written to twenty deans and secretaries of dental schools, making inquiry as to how many of their students were grammar, high school, academic or college graduates. To my inquiries I have received replies from eleven, only seven giving any statistics, only one who rejected any, (namely thirteen) as unqualified. These seven give us a total of matriculants, 1,859, graduates in literary colleges 118, some in veterinary colleges; of high school and academy 618; and of the common school education, which usually consists of the three R's, 926, making .063 per cent in advanced education, .332 per cent

in high school and academy, .498 per cent in common school or less in education.

According to the United States census report for 1890, there were in the United States 17,498 dentists, of whom 337 were females, which would give us about 8,749 who had only completed the three R's. The statistics of the Bureau of Education of the United States for 1894 and 1895 (not yet in print) show there are 45 dental schools in the United States, with 968 instructors for 5,347 students and 1,297 graduates. According to this it took one professor to graduate 1.343 per cent of a student, not taking into account the special and assistant professors. In the report of the Bureau of Education of the United States of 1892 and '93, there were 29 colleges, having 316 regular and 195 special professors, making a total of 511 professors to graduate 427 students, or one professor to graduate .083 per cent of a student. Of these 29 dental schools one graduated 1 student with 11 teachers, and one graduated 128 with a corps of 52 instructors. These are the two extremes at the ending of the year 1895. The dental schools of Chicago at the close of the school year 1895-6 had more than 1,000 students. They stamped "graduated" on over 300, and many of them could reply to examination questions similar to those reported by Dr. Brown, of New Jersey. The applicant for graduation replied to the question, "What is shock?" A. "Shock is the sudden checking of the nerves caused by accident." Again, "What is the difference between a narcotic and hypnotic?" A. "Narcotic acts on part the small intestines, hypnotic acts on the whole large intestines." Which is only excelled by the medical student when asked, "Of what cause, specifically, did the people die who lost their lives at the destruction of Herculaneum and Pompeii?" replied, "They died of an eruption, sir." Dental colleges—Heaven save the mark of most of them—are turning out barbers, apprentices and dry goods clerks by the hundreds, sending them out freshly branded as D. D. S., to prey upon the public. He who would acquire a clear insight into the principles of dentistry must have either a fair education or a development of a perceptive faculty akin to genius. To assume that a man of merely ordinary ability and education can pass from an apprentice of a trade to the profession of dentistry by a three year dental college course is to suppose an impossibility. Many of our dental colleges do not ask or seek to know the mental qualifications of those applying for

admission in their institutions. The great and main object is the qualification to pay his $100 annual tuition fee and the other incidental expenses connected with the college. This being the case, and as many men are no more honest than the law compels them to be, When ! Oh ! ! When ! ! ! shall we have a law that not only regulates the practice of dentistry, but also the dental college? The great need of a national law controlling these institutions, and a board in every State, of the profession, before whom every one who wishes to practice dentistry should appear for examination to prove he or she is qualified before being permitted to enter upon such duties, no matter what college he may hold a certificate of graduation from, as most of them are conducted on a commercial basis, not to make men qualified for the duties of the profession, but how many dollars they can make for the stockholders.

It is a great injustice to any board of examiners to be compelled to say which are reputable and which are not. Because a person holds a certificate of having passed a three years' course in some dental school does not guarantee that he is qualified to enter upon dental professional duties. Dr. Koch in his paper last year on "Illinois Statutes of 1881," in discussing his college orchard says, "The board is only permitted" (I would say compelled because the college has established a three years' course, and belongs to the National Association of Dental Faculties), "to say this fruit grew upon a good tree, therefore it is wholesome, delicious, beautiful, pure and in every way fit for the market." Manitoba's legislators have looked after the welfare of the people, though among the younger governments, it enacted a law requiring every one to take an examination before examiners. Why should Illinois legislators be behind Manitoba or little Saxony where no one is permitted to shoe a horse unless he has passed a public examination and is properly qualified, a provision that saves money for farmers and others owning horses? Can it be possible that the law making representatives of this State think their constituents are of less value than Saxony of its equines? Bishop Vincent said in relation to the clergy, "God does not so much call men to preach as he calls them to prepare to preach," so the wants of the public are not so great for dentists as for those who desire to enter it, should prepare for it.

Illinois is the happy possessor of many treasures. In her bosom she carries a mine of wealth. The annual growth of her

cereals are of more value than the whole output of the silver mines in the United States.* She is a world by herself, and stands in many things the first in the galaxy of stars that compose the Federal Union. It was her troops who were first to carry our National banner through the gates of the Montezumas in 1847. Men from Illinois have lead the Nation through its most perilous periods. It was an Illinoisan who won the first and last battle in the deplorable internal disturbance, which cemented the diamond starry banner into one glorious union of "one among many," which represents the essence of liberty, free thought and advancement in all branches of education. The one distinction Illinois should be proud of is to have been the home of a Grant, a Logan, a Douglas, and the immortal, incomparable, honest father, Abraham Lincoln. In our profession she is among the first; her State Dental Society ranks first; her dentists contributed the greatest amount of financial support to the last and greatest dental congress, in 1893. But the State Dental Society was unknown in it, save through its treasurer's report, and it is an Illinoisan who so far has carried forward and executed the will of the Dental Protective Association, and saved to the dental profession in the United States an average of $100 each from *unjust* and *illegal taxation*, saving to the members of our profession of this Nation the sum of $1,749,800 annually and to its practitioners in this State $170,000 each year. Every one who is not within its fold should hasten to get there for his own protection, and bear his share of the burdens. According to the census report of 1890 there were 17,498 dentists in the United States. There are to-day 1,700 in Illinois, all protected by 2,931 members of the Dental Protective Association, and the energy of a few in a just cause. There have been obtained patents on almost everything pertaining to our profession, from treating and extracting an infant's tooth to the fastening of a clasp to a plate for one in old age. Contrast the smallness of these things with the latest discovery of the age, which was freely given to the world in a day for the benefit of mankind by Röntgen.

Let us have faith that *right* makes might, and in that faith let us to the end do our duty as we understand it.

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*United States coining value of 1889, $66,396,938; cereal value of 1890 $1,376,038,615; corn alone of 1889 about $59,515,341.36.

DISCUSSION.

Dr. C. N. Johnson: The president kindly requested me this morning to open the discussion on his address, and to criticise him if I found anything with which to disagree. I am glad he has given me that privilege, because I have found something to criticise. He made one reference, however, that I am glad to commend, namely, in regard to the late Mr. Bingham, and I simply desire to corroborate to-day what has been said and written about that noble man. But as to this immortal, imperishable, eternal question of colleges, I have just a word to say. I suppose I am entirely too sensitive about the criticism that has been heaped upon colleges. But I believe a man should be privileged to be sensitive who spends winter after winter in directing the best energies that lie in him to advance the curriculum of dental teaching. I notice now, as I have noticed in the past, that in the discussion of this subject, the men who know the most about dental colleges are those who have never had anything to do with them. It would be a matter of wonder if our colleges developing as rapidly as they have in the United States, did not make mistakes. But I am not here to defend the mistakes of our colleges. I am here to say that the work the colleges are doing to-day for the benefit of the profession is ignored by a large number of men, and the men who are on the outside have little conception of the energy necessary in college teaching. I refer those men to the kind of students turned out to-day as compared with those turned out twenty years ago. Let them see the two classes operate and they will see the difference. Gentlemen, we are making some progress and I do not believe the colleges should be criticised all the time. If they make mistakes, and they probably do, they should of course be corrected, but the wholesale condemnation we so often hear tends to no good.

As to the number of students graduated, probably too many men are coming into the profession, and yet the public do not get the proper dental service that they require. The main point in connection with this matter is to educate the public up to an appreciation of dental services, then there will be work for all of those dentists who are reputable practitioners.

Dr. Stevens touched on one subject with which I am quite in accord, although I do not want to seem to agree with him entirely because he would not like that. He spoke of the preliminary re-

quirements. I think that these in the colleges of the United States should be raised. One college of itself cannot do it, but they should all combine to do it. In this connection there is another side to the question. I used to be more rabid than I am to-day over preliminary requirements for young men entering our dental colleges. I have had considerable experience in this regard, and I have often found that the young men who came with their certificates and diplomas from academies, did not turn out to be any better dentists than others who came without diplomas. It requires something more than a college education to make a good dentist. While I am strongly in favor of raising the general standard of dental education, at the same time I want to say that there are a great many men who to-day are famous in the profession, and who have reflected the highest credit upon it, but who if such requirements had been exacted at the time they entered the profession, would have been kept out of it, and we would have lost them. There is one eminent man sitting in this room to-day, who told me a few years ago that if these preliminary requirements had been enforced when he became a student, he never would have been a dentist, simply for the reason that he could not live up to them. This of course is not a conducive argument in favor of admitting men who are not well educated. But the dental colleges are not always to blame for the admission of students who are not educated. I presume the president of this society, if he were at the head of a dental college, would accept an applicant for admission to the college, provided he furnished a second grade teacher's certificate. I know of an instance not long ago where a man seeking admission to one of our dental colleges, presented such a certificate. Later on, in writing his college examination he spelled the word senior "cenior." He always wrote the first personal pronoun with a small letter, and his general composition showed a corresponding deficiency.

In some matters the dental colleges are helpless, but it is undoubtedly true that improvements should be made in our matriculation methods.

As to lengthening the period of instruction, I believe that a four years' course is none too long. We must eventually come to that. We cannot take the rough timber we sometimes get, and mind you, when I make that statement, I do not necessarily mean the men who are uneducated, for some of the educated men who

seek admission to our colleges are the roughest timber we get, so far as making good dentists of them is concerned, and in three years qualify them to go out and do justice to the public. A four years' course is therefore essential.

The matter of having an examining board to examine students that enter the profession, is an old subject. It has been threshed over time and again, but I will say that if we are going to place this matter in the hands of State boards, we must have good boards and must give them the implements of war with which to do their work properly. I say this in no spirit of criticism of any State board we have had in Illinois. The State examinations have been sadly deficient, but not by reason of any fault of the board. They have arisen out of the peculiar circumstances existing. Some of them have simply been a farce. It is impossible to judge from the methods used in the examinations whether men were qualified to practice dentistry or not. I should be glad indeed to see the State boards have the regulation of this matter, but they must be given the necessary funds with which to conduct proper examinations.

Dr. B. J. CIGRAND: I have only a few remarks to make on this subject, and I agree with Dr. Johnson with reference to what he has said regarding our dental colleges, that the good ones frequently receive the blame which should be heaped upon the poor ones. The profession do not frequent our colleges as much as they should in order to see and acquaint themselves as to how the work is done. That there should be a reform in some respects in our dental colleges there is no question. I believe one reform can be brought about by an examining board for matriculation. I believe that each college in the State ought to have certain members of the faculty to represent it on a board for examining students for matriculation, and all students wishing to matriculate in any dental college in the State should be required to appear before such a board. They should be examined on the various subjects outlined by a National Board of Dental Faculties. After the applicant passes this board he should receive a certificate permitting him or her to enter any college in the State. As it is now the applicant goes to one college, and after having gone through a rigid examination in physics, mathematics and the other prescribed branches, and fails to matriculate, he simply goes to the next college, likely on the opposite corner, and after a routine examination he matriculates there. The result is the good school helps to hold up the

standard, but the poor school does not get the blame. There should be an investigation into this matter.

I know that this undesirable condition of things exists from experience. If the Illinois State Dental Society would discuss this matter at some length and arrive at some definite conclusions, I believe that as a body of dentists it would do the dental institutions a great deal of good. This board to which I have referred should have the power to determine who shall and who shall not matriculate. This is the great question. We must establish a high fence for our preliminary requirements. I would suggest that those students coming from the country or city with a good preliminary knowledge, possessing degrees, or who have had a good English training, should be exempt from examinations in the freshman course, that their attendance upon 80 per cent of the lectures should be considered sufficient. Any man who has a good college training, who has merited the degree of A. M. or Ph. D., or any of the degrees equivalent to these, is sufficiently trained and learned to get the salient points of lectures without having to go through an examination. If students were thus solicited and such encouragement were given, a betterment in the condition of our colleges would certainly result. I believe that reform is to come about in that line. The whole thing in my estimation sums itself up in a board to examine applicants. When that particular point has been settled, I believe the grievances now before the dental profession will have been agreeably adjusted.

I am in favor of lengthening the course and of making it more rigid in every detail whether it benefits the colleges in a financial sense or not; this society could do a great work in aiding the reputable colleges in establishing a curriculum which would in many particulars reflect credit upon our profession. I am most decidedly in favor of raising the standard of dentistry and know of no safer method of procedure than to inaugurate a more universally rigid course in our dental schools, but this hoped for end cannot be attained under present existing circumstances unless a board of probation such as I have outlined be in force. With this board we could hope for better and brighter matriculants and more dignified graduates. If a college cannot live by having good men enter, it had better fall by the way and die.

Dr. E. K. Blair: I would like to know of Dr. Johnson what effort the colleges are making with regard to the matter of low

prices for dental services. There seems to be a class of practitioners coming into the profession with the idea that the first thing necessary to secure business is to reduce the prices. I would like to ask, if it is in order, what the colleges are doing toward impressing upon the minds of students the necessity of receiving ample pay for services rendered to patients. Students should be taught that it is not right to reduce prices in order to secure business.

Dr. C. N. Johnson: Since that question has been asked I will say that it is a matter of ethics, and I do not know of a dental college in which ethics are not taught. So far as answering the question of Dr. Blair in detail is concerned, I cannot do better than refer him to a lecture which I delivered to a class of students on this subject this winter. It was published in the March number of the *Dental Review*. I stated there my ideas in reference to this matter.

Dr. E. K. Blair: It seems to me that our colleges need to do more work in the direction I have indicated. It makes a deep impression upon the mind of the student. The tendency in some localities to do dental work at reduced rates is ruinous to a great many practitioners.

Dr. C. R. E. Koch: I am in love with the dental college professors; I am in love with the dental profession; I am in love with the people and with the subject under discussion. I apprehend that all of this discussion and hackneyed talk is very largely due to the want of a correct understanding of each other, and not to a real difference of opinion on the main question. I think all of us, whether we have been to college or not, have sufficient intelligence to know that it is desirable to get the profession on the highest possible plane attainable at this day, and I was very glad to hear the Governor say something that I have myself said several times before: "That a profession is judged by its best men, but the aim and great consideration for a profession's work should be to raise, to elevate the lower stratum as near to the top as possible," and I hope that those of us who have any influence with the Governor will see that when the next legislature meets he will use his executive power to help us to the attainment of that end. (Applause). Gentlemen, it is unnecessary to cast odium upon honestly conducted dental schools, upon faithful workers in the dental schools. We all recognize them, and whatever is said in

criticism is never said in criticism of these men, but upon conditions which we and they should labor to change.

The question Dr. Cigrand raises presents a dilemma. He would have a board of examiners for matriculants composed of representatives of the colleges. That is all right if colleges A, B and C come in and live up to their agreement, but the plan is impracticable, as D, E and F may not. Whatever we do, let us aim to obtain practical results. If we lay aside personal pet theories for awhile and compromise upon the attainment of practical results for the benefit of the people, and incidentally of the profession, we will get as near to getting the right thing as possible. What I would wish the Governor to do is to recommend that a law be passed, or the present law so amended that no man hereafter shall enter the practice of dentistry in this State until he presents a diploma from a dental college. Mind you, I do not say *reputable*, for I do not care whether the college is reputable or not. You cannot make it reputable. The question of reputability is a moral one and the judge who sits upon it may have a more or less moral bias, consequently you cannot get a judgment that will stand in all cases. What we ought to have in the interests of the people and consequently of the profession is this, that no one shall enter the dental profession hereafter excepting he presents the diploma of a college that shall require not less than three calendar years of instruction before granting such diploma, (if you wish to raise it to four years I am willing) or who presents a license of any foreign country or State in the union, showing that he has been in practice for ten years previously. Then all men possessing these qualifications shall go before a board created by the majesty and might of the State of Illinois and have the value of their credentials passed upon by personal examination before a license to practice in our State is given them.

Dr. Johnson raised an excellent point which those of us who have had the misfortune of serving on a board know how to appreciate. Give us a law that shall require a large enough fee for these examinations and confirmation of the diploma and you will have a revenue to make these examinations what they ought to be. In addition to that the law should provide in very plain language for inflicting punishment upon transgressors. It ought not require the action of a grand jury to find an indictment before an offender can be brought to trial. The simple establishment of a fact

should be proof for conviction in any court of justice, and the necessary indemnity should be enforced. If we can unite on this line without collegiate or other jealousies, we can carry the fight. We can hold the Governor to what he said. He will have to join us.

Dr. Stevens raised one other point. He spoke of a national board. A national board would be an unconstitutional body. There is no such thing attainable because the constitution of the United States reserves to all the different States the right to make their own police regulations. If the State of Illinois would take this step it would not be long before other States of the union, that have not already reached it, would join and we would have practically a national law. We should have comity between the States. There are a number of older practitioners all over the country who never enjoyed the privileges of obtaining a dental education the same as the young men of the present day do. It would be manifestly unjust to debar them from coming to the State of Illinois if they can show that they have practiced elsewhere under authority. If the law requires a diploma from an efficient dental college, and accepts nothing else, we would bar out nearly all those ladies and gentlemen who may have gained their knowledge in foreign countries, because in those countries, as I understand it, there is no such thing as a dental college as it is known in the United States. The foreign "diplomas" that it has been my privilege to see were no more than a mere statement of the fact that A or B had appeared before the duly organized board provided by law and has given satisfactory evidence of his ability to practice dentistry. This is almost the exact wording of the licenses used by the several State boards in our States, and it would be a manifest injustice to have them recognized as diplomas when coming from foreign countries, and issuing licenses to the holders to practice their profession here; whereas the practitioner from Iowa or Wisconsin coming to Illinois with such a certificate is told that it is not good. The official certification should be given standing and recognition. We ought to make the thing as easy as possible of accomplishment for the prospective practitioner with all due safeguards to the interests of the people. That dental colleges have made mistakes is no reflection upon them or their teachers. It is the fault of our system, of our law of incorporation. Just as

quick as a State board has its local colleges all brought into line to comply with the requirements of the State, some new college bobs up, secures a charter for $25.00, and the whole work has to be done over again. The question of reputability of colleges should not be left to the board; simply require the production of a diploma after a certain established standard of tuition and make everybody that comes be treated alike, and I think we will solve the entire question, and I feel that if all of those within the hearing of my voice would go to work as missionaries to this end, we can get such a law through at the next session of the legislature.

Dr. A. W. Harlan: One phase of the president's address, which was really intended to be more or less of a disparagement of the dental profession as compared with others, is a high compliment, and that is this: In the statement of the number of matriculants and graduates in schools of theology and law and medicine, the highest number of graduates in the arts and sciences only reached forty-four for theology, and theological schools have been in existence for thousands of years. Schools of law have been in existence for more than one thousand years, and yet only 34 per cent of the graduates in the whole United States are graduates in letters. Medicine has been taught systematically for more than 500 years, and in a fragmentary way for nearly 2,000 years, and still the number of graduates in arts and sciences coming from the schools in 1893 and 1894 is only a fraction more than 23 per cent. The organized dental profession of the world does not go back sixty years and in that time we have nearly 7 per cent of the total number of graduates who possess degrees in arts and sciences, and more than 50 per cent of them are graduates of high schools or academies. This is extremely complimentary to a profession so young and so recently organized. (Applause.) It is easy enough to talk and to criticise the actions of men and corporations, but where are the reformers? Who are the men who lift up their hands and voices to stamp out abuses in professions as well as in civilized communities? They are very few. It is less than fifteen years ago that any one could enter a dental college in these United States and graduate after attendance upon one term. For the past two years the requirement has been three consecutive terms before a student could come up for graduation. I would like to ask you, Mr. President, and members of the society, whether it was the

members of societies that inaugurated this step, or whether it was not through the influence of State Boards of Examiners and the coöperation of dental college faculties that brought this about. Every year the members of dental societies get up and criticise and talk, insinuate and blow away the whole fabric of education, but it lives and thrives. It grows stronger and broader, takes in more subjects, teaches men to have a better education. The question of ethics, considered so lightly by some, will settle itself. It reminds me of what the governor said in his remarks a little while ago that a profession is judged by the best men in it. If the energies and efforts of the best men be directed toward lifting a profession up, all of the stragglers in the rear ranks will be gradually elevated too. I believe we are growing faster every year than any of the other professions. I think that the time perhaps has not yet arrived when a four-year course should be compulsory. That would prove something of a hardship to those 7 or 8 per cent of graduates in the arts as well as sciences. Why a man possessing a degree lower than that of a high school diploma should have the right in a professional school to sit by the side of one who has a B. A. or Ph. D., or some other title, showing that he has passed through a certain course of study I do not know. It seems to me to be an injustice to such a man who is well trained and has honestly earned his diploma. When a man has obtained his diploma he ought to have the same rights and privileges accorded to him for the amount of information which permitted him to gain that badge. So I think the colleges can do very well by insisting upon a three years' course, and with the aid of boards of examiners, if they will only keep up to that standard, we will get along fast enough, and when we are a hundred years old we will be able to show at least 20 per cent who are possessed of degrees in letters or science. I trust the proportion will be greater than that when we celebrate our centennial.

Dr. J. G. Reid: Reference has been made by Dr. Johnson to the question of ethics and the regulation of fees for dental services. When the people are fully educated to an appreciation of what a professional man ought to get for a certain class of work, they will pay it. It is a slow way of reaching the masses, but it is sure. They will arrive there some time in the next hundred years, that is, there will be a gradual progress in that direction. I feel that the question propounded by Dr. Blair

was in a measure very pertinent. It was reasonable, and in certain localities he undoubtedly knows of cases where prices have been considerably reduced, and which doubtless prompted him to ask the question. I will state that when a student leaves his alma mater, he is rarely qualified to conduct a business on business principles. He may know probably how to treat the diseases incident to his profession ; he may know how to handle the mouth from a mechanical standpoint well, but he does not have the slightest idea how to conduct his profession on a business basis. He is entirely ignorant of it. We are asked almost every day throughout the college year by students these questions : "How do you do so and so, and how much do you charge for so and so? What would you charge for this, and what would you charge for that?" We teach them in a measure the value of the service. When they leave college they have not the slightest idea how to charge. They have not been in practice a sufficient length of time to determine what the service is worth. They act upon the principle that they must do the work cheaply in order to get business. It seems to me there should be a business training in the dental college, as well as the theoretical and professional training. The business training is just as important as the knowledge required to practice. Dental institutions are lax in imparting that information. I have had more or less experience with college work for years and I know that this is one step which is neglected. I believe if students were taught how to properly charge for services rendered, it would be an advance.

Dr. Garrett Newkirk : I did not intend to say anything on this subject, but it seems to me that we get into practically the same groove every year. We have the same tirade by somebody against the dental colleges, dental professors, present systems, and in fact everything in general, usually by men who have not done very much themselves personally for the advancement of the profession. (Laughter.) One great mistake is that we take too narrow a view. We look a little at this thing or that, instead of looking over a long period of time and seeing what progress has been actually made. There are men here who remember something about the progress which medicine has made in the last thirty years. When I was a boy a man could leave his blacksmith shop in the morning without one single idea of physiology, anatomy, or materia medica, could have a sign painted "Dr. Jim

Smith," and have it hung out before night. There was nothing to prevent it except the man's own conscience, and the sense of the community, both of which were often wanting. In short, there was nothing to prevent any man from starting as a doctor of medicine. I can remember that well and my hair is not very gray. Then came medical colleges, one after another, with all their imperfections; they had plenty of them, but on the whole they were organized, superintended and managed by men who had the interests of the profession at heart; men like Daniel Brainard, J. W. Freer, N. S. Davis, of Chicago, and many others, east and west. These men had the interests of their profession at heart, gave their best energies to its advancement, raised the standard of education, and instead of graduating students at the end of one or two years, as had been done, they increased the course to three years, and now it is four and five years; and to-day, through the collective energies and ambition of the best men of the profession, American medicine stands in an exalted position before the world. These things are matters of evolution. They start from small beginnings and grow. It has been the way of education in all departments, from the common schools to our colleges and academies; and it has been the same with dentistry. We can all remember, even the youngest of us, the great advancement that has been made in dental education. We know that the standard of dentistry to-day is incomparably greater than it was twenty or thirty years ago. We are on the up-grade. We are climbing higher, but we are not doing it by the stimulus of mere fault finding, insinuation and blowing, as Dr. Harlan has intimated. We are doing it by the honest steady purpose of the men who are engaged in the work. We have just about reached the point where we ought to have a good law in the State of Illinois, and Illinois is generally the banner State. If we can secure such a law as we desire some other States will fall in line and the future will be glorious.

Dr. Geo. D. Sitherwood: I live in the central part of the State. I am connected with no dental college, but occasionally look in upon some of the best dental schools in this country and I wish to bear my testimony to the marked improvement that has taken place within the last fifteen years in the matter of equipment and facilities for turning out better students. I have had the pleasure of meeting many of the students who have graduated from our dental colleges, and I am assured that these men know

how to practice dentistry a great deal better than did those of many years ago. I am sure that this society is doing all it can toward elevating the profession. The one thing I wish more particularly to emphasize is, that it should be our aim to send the dental colleges better material in order to have more competent dentists. By doing this they will some day become useful members of this and other societies.

Dr. E. K. Blair: I trust the members of the society will understand that when I spoke of teaching ethics and of maintaining prices for our services, I did so in good faith, and I want to say that there is no one more in accord with the colleges, when their work is well done, than myself. I believe the wholesome growth of our profession largely rests with the colleges. Fortunately I meet college professors a good deal, and I am sorry that I do not meet more of them.

In the executive council meeting this morning, when it became positively known to me that we had almost 2,000 practitioners of dentistry in the State of Illinois, and the society had only a membership of 165, I said that there was something radically wrong in the present condition of things in the State of Illinois, or else this society would have a larger membership. Just what it is I do not know. This society has exerted a good influence for years, and yet our newspapers throughout the State are full of advertisements. When I asked Dr. Johnson a question, I thought the colleges might stem the current as it was running in the wrong direction. I feel that this is the place for us to post ourselves in regard to these matters and I know of no one better qualified to answer these questions than Dr. Johnson. I trust the colleges will go on with their good work. Just in proportion to the output of the colleges will be the character and growth of dental education. That is what we want and must have. When we consider that we have only 165 members in our society, with 1,600 or 1,800 dentists to pull it down, there is abundant room for the strong arms of the dental colleges of to-day. Some impression must be made upon students. They must be taught to build up and not to pull down. It is important to the people of the State inasmuch as they come to us to have work done. The young man, who in starting out to practice dentistry works for small fees, makes a mistake. It will have its effect upon him and eventually drag him down. It is injurious to the people who seek his services and we all feel the effects of it. The

colleges should take the initiative in this work. It is my desire to uphold the colleges.

I have had young men come to me who desired to fit themselves for the practice of dentistry, and realizing that they had not the ability to follow the profession with success, I have frankly told them so. I have this ambition, that when I send or recommend a student to a dental college and he graduates therefrom, I want him to reflect credit upon the man who sent him there. Let us therefore help the colleges, if possible, by furnishing them better material. Let us do something to stop the downward current.

Dr. E. D. Swain: I think the time has come for short speeches in this discussion. I am not in the habit of making long speeches, and consequently I have but a few words to say. It is apparent to me that Dr. Stevens wrote his address with the idea of drawing out discussion, and I think he has succeeded most admirably. Of course, from the position which I occupy, I am compelled to say that I believe the dental colleges are doing what they can to elevate the profession. The point I wish to make is that no profession can grow alone. We must have the influence of the community. All educational institutions are trying to grow in the same direction, upward, and so long as we have some of the counties of the States of Illinois, Indiana or Ohio boards of education, that are putting teachers certificates upon the market for so much money, the dental profession cannot grow, nor can any other professional organization. I know this is being done, and I hope the men composing this society, when they go home to their respective counties, will investigate the matter a little. We accept students upon teacher's certificates. If an incompetent person pays five or ten dollars or even more, and brings a certificate to us, we ask no questions. We accept that student. If it is bogus the blame cannot be put at our door.

Dr. E. H. Allen: A thought has suggested itself to me by the discussion of this address, namely: I do not know that any dental college requires a preliminary examination in fitness relative to the mechanical ingenuity or genius, as you may call it, of the applicant for admission to a dental college. I do not care whether a man possesses the degree of Doctor of Philosophy, or Bachelor of Arts, if he has not the make-up within him by which he can carry out the theories learned in a dental college, if he cannot carry out with the ends of his fingers what he is

there taught, he is not fit to touch human teeth. I have a case in mind at present. The person is a graduate of one of the dental colleges not a thousand miles from here. He holds a diploma and is entitled to practice. I do not think it is the fault of the college entirely, but if the college required some preliminary requirement to find out whether this man was fit and had the ability to work with instruments upon teeth, they would soon find out whether he was a mechanic or not, and if he proved himself incompetent in this regard they should have rejected him on that ground. By so doing it would be better for the public at large. It seems to me we ought to have a law to protect the people from such incompetence. I do not know that any such requirement has been exacted by any dental college, and it seems to me it would be a good thing if it was.

Dr. STEVENS (closing) : I have very little to say. I desire, however, to correct some of the statements made by Dr. Harlan. He misunderstood the figures as given by me in my address. (Here Dr. Stevens again quoted from his address.)

In relation to dental colleges, you will notice that I said *most* of them, and not all of them, should be condemned when viewed from a financial basis or standing. I stated that the main requirement of the applicant for admission was his ability to pay $100. I know of two applicants who went to a certain college and were rejected. They then sought admission to another school and were admitted. I do not know but that they have graduated as dentists.

Because a man has received a collegiate education does not make him a qualified man for the practice of dentistry. There are many college graduates who could not make a hoe handle even if they tried.

Dr. Black has been referred to as saying that if the standard of dentistry had been raised to the level that it is to-day when he began to practice, he would not have been able to enter the profession. He has been one of our most energetic students from early life, and many a man has been the same. Elihu Burritt was a blacksmith, and you are all more or less familiar with his history. His early career was very slow, but he would have made a reputation in almost any profession which he might have chosen. While he labored as a blacksmith he learned several languages. I know of a man who could not read his a, b, c, at the age of twen-

ty-one, and yet within fifteen years he became the superintendent of public instruction for the State of Tennessee. Did that man remain idle and waste his time? Not at all. He sought every opportunity to educate himself.

Dr. JOHNSON: May I ask one question for information? Did you not refer, Dr. Stevens, in your remarks to Dr. Black?

Dr. STEVENS: Yes.

Dr. JOHNSON: The man to whom I had reference to in my previous remark was not Dr. Black. We have other eminent men in the State besides Dr. Black, and it was not Dr. Black whom I had in mind.

Dr. STEVENS: He to whom you referred deserves the same commendation as I gave Dr. Black.

# NEW METHODS FOR PRODUCING BICUSPID-BAND-CROWNS WITH PORCELAIN FACINGS AND CUSPS.

By B. J. Cigrand, B. S., D. D. S., Chicago.

Possibly the most useful invention recorded in the annals of dental art or science, is that of the individual crown, the basis of the successful bridge denture. Few themes have claimed the consideration of the profession with such constancy, and I dare say, few have a more enduring prospect.

The evolution of the dental crown is deserving of close study and its frequency as a subject in the literature of the profession is a sufficient criterion of its importance. This intelligent congregation of dentists, I am happy to say, is familiar with the varied evolution of the dental crown, and thus an extensive explanation of the numberless improvements in crowns, needs not solicit further consideration. Privilege me however to remind you of the classification of crowns in order that you may more fully comprehend the purpose of this paper.

The great variety of crowns which are at our command may be divided into three classes: First, those of porcelain; second, those of metal; third, those of both porcelain and metal. These three classes are again subdivided into three groups, namely, those which band the root; next those which simply rest on the naked root and depend on a post for anchorage; and lastly those which are a combination of the two former.

Of the scores of methods employed in crowning roots, none can be advocated as the universal or best, each has an undisputed territory and merit, and all have faults; and it remains for the operator to decide which of the methods, or systems is most preferable, from the point of durability, appearance, usefulness and adaptation.

The proper construction of an æsthetic and practical crown requires much scientific information, great mechanical dexterity, thorough knowledge of proportions, a fair understanding of har-

mony, and a sound judgment; and crown work affords a wide scope for versatility of talent and offers the widest avenue possible to the inventive genius. The varied and complex cases presented for treatment or restoration, frequently suggest to the prosthesist, novel contrivances and methods of construction and application.

Do not infer from the proem to this paper that I am about to introduce to you a faultless crown, for I would remind you that Pope has wisely said:

> "Whoever thinks a faultless piece to see,
> Thinks what ne'er was, ne'er is, nor ne'er shall be."

I am fully conscious of existing defects in the crown, yet I am confident you will recognize in it features worthy of approbation.

The crown which has of late attracted attention is the bicuspid with porcelain facings; no less than fifty different methods have been advanced to produce a bicuspid crown free from the display of gold or platinum, and yet be consistent with the laws of harmony, both as to color and shape. The all gold, or telescope crowns, have in these recent years been relegated to the bygone days, and in their stead we find the more natural substitute, the porcelain. Our patients no longer desire to disclose to an observing public, that their teeth have been repaired; they dislike the mammoth gold filling or the attractive gold crown; they solicit service which can render dental results approximate to nature; and our patrons have come to believe that "'tis true art to hide art."

No substitute has a brighter future than porcelain, for it is a material in which not only the beauty of expression delights the eye and gives evidence of the highest æsthetic cultivation, but links to that beauty the additional charm of usefulness.

The crown which I submit for your consideration is a combination crown, porcelain and metal, and is anchored by means of a post. In construction it is simple and answers all requirements of a substitute. My experience has led me to know that matters recommendable to the profession should have stood the test of several years before presenting them to a representative body, such as the Illinois State Dental Society; but I have used the crown for several years and assure you I feel that the crown is meritorious in many respects. It embodies the requisites of an ideal crown, namely: durability, appearance, adaptation and usefulness.

The class of roots upon which I would advise its use are the bicuspids whose crowns are badly decayed and necessitate the

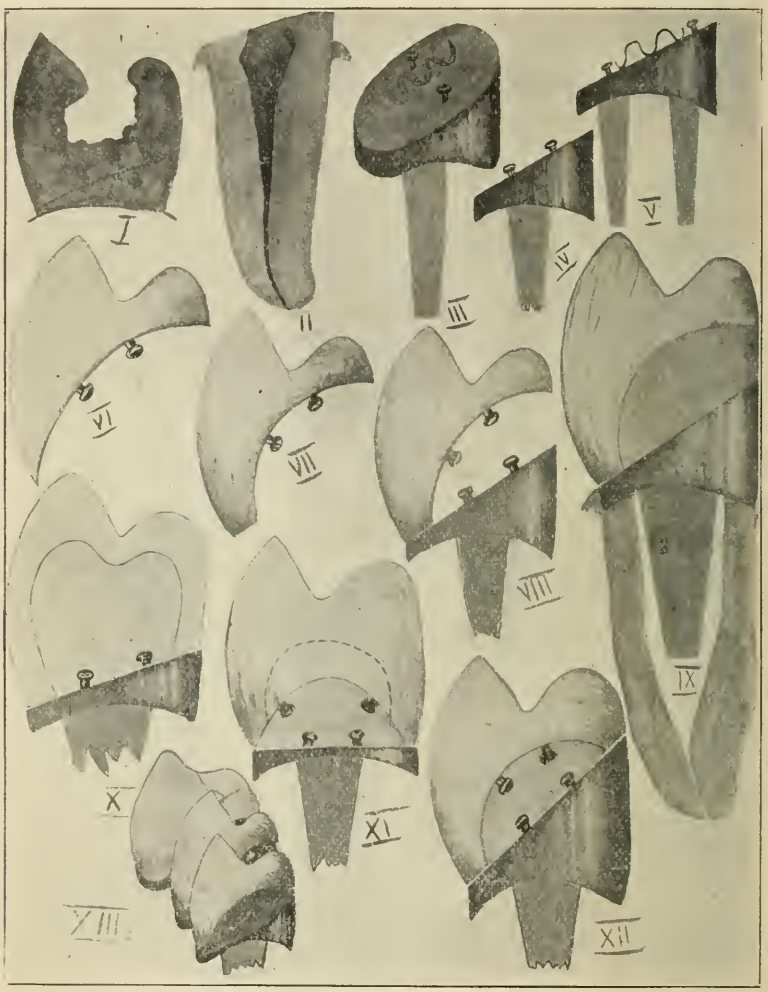
devitalization of the pulp. After fashioning the roots so as to leave it prominent on the palatal surface and beveling it toward the cervico-labial margin as represented in Fig. 2, prepare the pulp canal as for the Logan crown. Then proceed to make a cope to properly envelope the exposed portion of the natural root and solder on the upper portion of the cope several platinum pins (taken from plain teeth), and on its lower surface a platinum post, as seen in Figs. 3-4; or if desired to increase the strength of the cope and further aid in anchoring the vulcanite, a small ribbon of gold or platinum should be soldered on to the superior surface of the cope as shown in Fig. 5.

After having thoroughly polished the cope, position it on the root and select the proper sized, shaped, and colored porcelain tooth, and grind its cervical margin as in Figs. 7-8, this will permit it to accurately fit the inclined surface of the cope. By means of wax placed on the cope, the tooth can be held in place and perfect occlusion can be attained. If at all possible remove the cope with the tooth still in position, then thoroughly wax up the interspace between the tooth and the cope and invest the crown in the dental flask, remove the wax and pack the space with black rubber, or maroon rubber; vulcanize the case and after giving the gold and vulcanite a polished surface, lodge the crown on the root and fasten it with oxyphosphate. This will give you a neat, serviceable substitute, free from interspaces which might lodge foreign matter.

If it is desired to produce one of these crowns so that the vulcanite will be invisible on either the labial or palatal surfaces it can be accomplished by grinding the palatal surface of the tooth and extending the lingual surface of the cope to join with the tooth as represented in Fig. 12; or by using the Howland crown (porcelain Fig. 10), packing the chamber with rubber and treating it as the preceeding case. The countersunk tooth (Crescent), can also be used to good advantage in this method of crown work as shown in Fig. 11. A crown similar in construction, yet void of vulcanite can be made by using the saddle backed porcelain plate teeth (Sibley or White); adapt a piece of gold, thirty gauge, to the concave or saddle portion and then fashion the cope so it will perfectly fit the gold on the plated tooth. After the cope has been adjusted, remove the tooth and solder the cope; then properly polish the latter and position the porcelain tooth on the cope and clinch the

pins of the tooth to the cope, thus you have a metal porcelain crown without having subjected it to the blowpipe or furnace.

This crown can also be used in conjunction with bridge den-




Bicuspid-Band-Crown with Porcelain Facing and Cusps.

tures, especially where it is intended to replace the bicuspid teeth; the method for bridging is so near like that of crowning that it would be superfluous to enter into further description.

Those dentists who have a furnace for baking (Fig. 13) porcelain can employ this system for crown work and produce a very neat crown by making the cope of platinum, and instead of attaching the porcelain by means of the vulcanite, can do so by filling the interspace with "body" and subsequent to baking the enamel, polish the metal and a most perfect crown will result.

DISCUSSION.

Dr. J. W. Wassall: While in the main the method of making crowns described by the essayist is capital, there is an element of weakness which endangers its permanency in the use of vulcanite to connect the porcelain face to the cap. I have never seen one before made in this manner, but we all know how rubber deteriorates and sometimes shrinks. I have myself used a cap and porcelain face in connection with the Downie body, and also recently, since I have had the Custer electric furnace, with the Close body. I have had some break downs with the Downie body, but not with the Close body, and I should think the use of the latter would prove a perfect crown. I do not see how a crown can last unless iridio-platinum is used in preference to platinum for the band. I should consider a band very faulty that was made with platinum alone. This opinion has been verified by a few unfortunate cases where I used platinum before resorting to iridio-platinum.

I now use iridio-platinum entirely for the band, the cap and for the post. Platinum alone is too soft. Pure platinum is as soft as pure gold.

Dr. G. D. Sitherwood: I heartily agree with the statement of the essayist, that the time has arrived when we should try to imitate nature, as every artistic dentist does. We should strive to apply the form of construction which will give the best mechanical, and at the same time artistic results. The difficulty, I presume, with this kind of a crown, as I find with all porcelain crowns, is in getting the crown short enough. I have experienced considerable difficulty in that respect. I agree with Dr. Wassall in reference to the iridio-platinum band. I have made crowns of porcelain with Downie furnace, using a flat back cuspid and soldering with pin, letting the body run across and build up the inner cusp. A short and strong tooth is made in that way. I have had none of them break, and have been making them for two years.

My experience with the use of black rubber in such a small space as this, is that there is a tendency to form little bubbles, or to admit air, and there is not a perfect union of the materials. Vulcanized rubber in so small a quantity is not water tight, and I prefer the other method. The all porcelain cusp, using the platinum band, and building up under the cusp using the Downie furnace. I have not used the electric furnace. Short bicuspid crowns made in this manner will be strong and artistic.

Dr. W. V-B. Ames: The paper read by Dr. Cigrand deserves commendation, inasmuch as the author starts out with the assertion, that it is desirable in this kind of work to secure more artistic effects than we usually see on the streets of our cities in the way of conspicuous gold crowns. The paper covers a wide range in the matter of construction of these crowns. Personally, I should place very little reliance on rubber for this purpose. It seems to me it would take more time to invest and vulcanize a piece of this kind than it would to make one almost any other way. While I think these crowns may be very artistic when made, I should avoid the use of rubber.

Saddle back teeth I have used satisfactorily for crowns by backing up with gold and soldering to root cap. For six or seven years, ever since Ash & Sons have had a branch in America in fact, I have gotten much satisfaction from the use of the diatoric tooth for bicuspid crowns, where the length of bite will allow. A cap and pin fitted to the cervical end of such a porcelain tooth and soldered to the root cap, the porcelain tooth cemented to its cap with oxyphosphate or sulphate makes a substantial and artistic crown.

With high fusing bodies and the electric furnace we approach ideal results. I have had the same difficulty spoken of by Dr. Wassall, with the Downie body. If you have to heat this body several times in the completion of a crown there is great danger of the body first applied being injured by the later burnings.

Dr. W. H. Taggart: I cannot commend the method which we have had outlined to us. In the first place, the title of the paper is against it—"A New Method." Among the very first methods for attaching and making artistic crowns was the use of porcelain teeth, attaching them to bands by rubber. It was not considered a very artistic way of doing it. The rubber did not prove sufficiently strong for the purpose, the title of the paper is, therefore, somewhat misleading.

There is another unfavorable feature about it. If we use porcelain for the articulation we must have porcelain in bulk. Porcelain, in order to stand the strain we require for this purpose must be used in bulk and not in thin layers. (Here Dr. Taggart illustrated the importance of this by diagrams on the blackboard). I have learned by experience that porcelain for grinding surfaces must be in bulk.

The method of making the cap as outlined by the author of the paper, in order to save some of the tooth substance, I should consider a disadvantage rather than an advantage if we are going to use a porcelain bicuspid, for the simple reason that it is difficult to make an irregular shaped band with the long part of the tooth there (illustrating) and the narrow part there (illustrating). The difficulties of making this band more than outweigh the advantages gained.

Dr. Wassall spoke of iridio-platinum. There is an advantage in using it if you can make it fit, but by the time the iridio-platinum is thin enough to work well in order to enable us to adapt it to the root, the band which is not much stronger than a thicker piece of platinum would have been, and the platinum has a softness which readily makes it fit. The extra tightness of the fit adds additional strength to it, and it will outweigh any extra softness of the material. When the metal is in contact with the tooth substance, I have found no disadvantage in the softness of the platinum itself. For my own part I can see no disadvantage in the use of pure platinum in these cases. On the other hand i can see advantages in its favor.

Dr. J. G. Reid: What is the objection to platinum showing on the lingual surface ?

Dr. Taggart: The more you are engaged in this work the more artistic you desire to be, providing you do not sacrifice strength. To attain this end, we must use a greater bulk of porcelain. To have as little metal showing as possible and to let that which is visible be porcelain, develops one's ability along artistic lines.

Dr. G. D. Sitherwood : I was especially pleased with what Dr. Taggart said about these crowns. There is one point to which I desire to call attention. Sometimes a blue line appears at the margin after using platinum. I have overcome this defect by flowing a little pure gold foil over the band at that point, before I

bake the porcelain. By doing this no blue line appears. This, however, will only protect in the low fusing body.

Dr. W. N. Morrison, St. Louis: I desire to caution young men not to be heroic and cut down and destroy a better natural crown than the artificial one put in its place. While I like to see a porcelain face well adjusted, I think we ought to keep in mind the durability of the operation, which ought of itself to be paramount in the minds of our young men. For twenty-eight years I have given metal crowns a thorough test, and while they do not look well, I see many of them that have done such good service that many of the porcelain crowns, adjusted from a modern standpoint, cannot equal. Let us take one as a model in this figure (pointing to a diagram). I regard it as a misfortune to cut away as much tooth substance as is here represented to make the foundation given below. There is just where the whole metal crown gives invaluable service. In submarine operations, such as we have represented here—there is not a good practical man in this house but knows the vulnerable point of submarine cement. Cases come to you time and again to have their crowns adjusted and recemented. There was too much heroic cutting upon the root in its preparation. I merely rise to caution the younger men to go slow, and to allow their æsthetic taste to be somewhat offended by the use of some good metal crown that will remain for twenty years.

Dr. Cigrand (closing the discussion): I shall only occupy the time of the society for a few minutes. In the first place, a good deal of the last discussion has been foreign to the subject; notwithstanding, we have profited by it. The question was not relative to the anterior teeth, or the make of teeth that approximate the common Logan crown, but it involved bicuspid band-crowns with porcelain facings and cusps, and the method of their construction as given here is new. The question has been raised with regard to the platinum cap. I will say, in my case the cap was made of gold, No. 30 gauge. As to how far it shall be driven under the gums, I allowed as much of the tooth to remain as possible (Fig. 1), in order to secure anchorage for the gold cap. In other words, I followed the advice of Dr. Evans, of New York, who is a recognized authority on this subject, and he says that in all telescope work we should leave as much of the original tooth structure as is possible for anchorage, and that we should not

shove the cap up into the alveolar ridge. I trim it down as figure 2 shows.

With reference to the occlusion I will say, that when the cope is placed in position in the patient's mouth the occlusion is perfect, since the tooth is ground to fit the natural teeth.

The method of making crowns as outlined by Dr. Taggart looks very well on the blackboard, but when we come to do it in our everyday practice it is an entirely different picture that confronts us; and for that reason the crown to which I have directed your attention, is more readily adaptable and adjustable, and proper occlusion positively attained. All the dental depots will supply you with saddle back teeth, and the new teeth which are being manufactured are less scalloped and present more body at the palatal cusp and are in consequence stronger.

As regards the weakness of the tooth at this point (the palatal cusp) mentioned by Dr. Wassall, I must confess that it is a weakness on the part of the artist rather than a weakness of the tooth itself. Is the strain any greater on these individual crowns than on some of the saddle back teeth in the vulcanite case?

SEVERAL VOICES: Yes.*

Dr. CIGRAND: I do not think so, since the individual tooth yields, the other is firmly held in place by vulcanite. We are all entitled to our individual opinions. If there is any one thing that we should expect at this meeting it is just criticism. Your criticisms are of benefit to me as well as to others, and the man who is not able to stand criticism has no business in this society.

With reference to driving the band; I have no difficulty with the thickness of the gold I use. I prefer not to drive it too far through the gum margin. Dr. Brophy some years ago in a dental society made the remark that the hammer has no place in positioning crowns, its use being confined to the prosthetic laboratory; also, if he could not put on a telescope crown by the use of a stick and a little pressure, he would take the crown off and enlarge the band, thus avoiding any possibility of cracking the cope. There ought not to be too great a strain or hammer pressure brought to bear on the crown when it is being placed in position. If you do not desire the use of vulcanite, make the cope of platinum and fill the interspace with porcelain, as stated in my paper.

I thank you kindly for your criticisms, which I regard as just in many instances.

*Dr. GRAFTON MUNSON: The application of crowns to roots in different degrees of strength as to their texture as well as the septic condition of their contents, is a subject that is engaging the interest of a large number of dentists. The crown under our consideration has its phases of relative value. The banding of the root is the pre-eminent feature which commends it to our consideration.

To my idea all crowns adjusted to roots should be free from any substance that is capable of absorbing the fluids of the mouth. We cannot say that rubber is of such an impermeable character. The adjustment of the porcelain to the cope is a neat feature of this crown, and yet I do not regard it a time-saver, for most any Richmond crown can be soldered in the time of making ready for and duration of vulcanizing. There are æsthetic features in the crown of Dr. Cigrand that would attract, viz., the freedom of display of gold. There are ladies whose taste or culture do not crave the display of gold about the mouth. This crown will fill such requirements. It is the regret of the speaker that he was not present in person to discuss this paper as appointed, but circumstances over which he had no control changed the program.

# NEW OUTLOOKS IN DENTISTRY.

By C. E. Bentley, D. D. S., Chicago.

A retrospect of the art and science of dentistry fifty years ago reveals these twin sisters of progress struggling amid a "sea of troubles," surrounded by superstition and selfishness, distrust and disfavor. The march of progress of the profession in this short span of time has been phenomenally rapid and prolific. Superstition has disappeared, as the luminous rays of education have advanced; selfishness has been converted into true altruism; distrust has given way to the confidence begotten of fraternity, and the respect which is ours by virtue of well-earned laurels has caused disfavor to hide its head, while dignity and independence claim their own. To-day we stand in the midst of a vigorous and lusty manhood, with faces turned toward the rising sun of our expectations, our past triumphs adding new zest to the hopes that spring up within us.

To-morrow's vision should reveal a broader horizon, a clearer sky, bringing with it renewed energy and purpose.

The nineteenth century is about to close upon an epoch making period in the history of dentistry. It is what the tendencies presage that inspires this paper. They are the logical results of an aggressive and truth seeking set of men, whose zealous efforts are responsible for the suggestiveness implied in their work.

The new outlooks in dentistry are important in proportion as they relate to the prevention of those diseases with which we now contend, and some of which we so imperfectly understand. The dental colleges throughout our land will either retard or accelerate this condition in proportion to their alertness to respond to the ever awakening impulses which will lead to this position, thereby stimulating the weary plodder and the ambitious student alike to explore virgin soil.

Permit me in a somewhat desultory fashion to glance with you at two or three phases of recent suggestions in dentistry. I have not wished to frame an exhaustive inventory of our gains, but rather to note such features as can be led to wider beneficence

through forces which we may ourselves administer as we go about our usual tasks.

When we attempt to group the various diseases with which we deal, according to causation, our hypotheses soon become clouded with conflicting data, resulting in conclusions more or less speculative. In spite of the vast stores of experience with the human body in disease, clear down to the early part of the last decade, the nature and cause of some of the most common and fatal human maladies were practically unknown. Likewise has it been with dentistry. Caries of the teeth has presented a varied history. Some teeth decay rapidly, in others the progress is slow, difference of progress often occurring in the same mouth. Again, in some cases caries never occurs, and in some progressive caries seems to be spontaneously arrested, while in others it is persistent throughout life.

To one man more than to any other in our profession belongs the credit of directing our attention to that most important new outlook in dentistry, serum pathology and therapy. I refer to the Nestor of the dental profession, Dr. G. V. Black. Here is a field fruitful of suggestion and far-reaching results. To me this is one of the most pregnant suggestions that has come to the dental profession since the proposition of Robertson announced in 1835, that caries of the teeth was caused by acids, the results of fermentation.

Little or nothing is known of this subject at present. It has been simply suggested. It portends a constitutional dyscrasia, which may affect the fluids of the body, thereby affording the most favorable condition for the acid fermentation necessary for the decay of the teeth. Whether they act upon the teeth in their circulation through them or not, is not known.

You cannot fail to see the far-reaching results of this suggestion. If developed it should not fail to stimulate the most sluggish imagination. It means a larger knowledge of physiology, pathology, chemistry and bacteriology directly applicable to our profession. It may mean a therapy, the exact character of which may be a specific against dental caries. It will mean a great deal more than our contracted vision of to-day can encompass. It appears to me this suggestion will take us back to the cell pathology suggested by Virchow years ago. Somebody has said of Turner that he was a man who thought in paint. The modern devotee to

dentistry, if he seriously thinks, must think in cells. Evolution teaches us that through long processes these cells acquired peculiar forms, and have adapted themselves to special functions, each doing its particular work, and all acting in harmony for the maintenance of the life and performance of the body as an independent being. As to the vivifying influence which set this machinery in motion we are not likely soon to know. But this we do know, that all the things the body does, from the high borderland achievements in thought and memory down through the homely processes of nutrition and repair, are accomplished by these small life units, in accordance with physical law as definite and unvarying as are those which we trace in plant, and earth, and star.

The text has been announced, who will preach the sermon?

Another outlook which seems to portend much for the dental profession is dental and facial orthopedia. This specialty has developed so rapidly in the hands of a few men that its possibilities are practically unlimited. This specialty essays not to be satisfied with the correction of malposed teeth only, but extends its sphere of usefulness to facial deformities, the results of irregularities of the teeth and jaws, and by the scientific application of force to the osseous structure, metamorphose a once ungainly and deformed face into one pleasant to contemplate. May not this specialty compel its devotees to look into the possible causes of these deformities, and drive them into that awakening science of osseous deformities, to which criminologists have recently contributed so much? If these deformities be largely the result of constitutional causes, subjects of a profound scientific nature come within their province. If these stigmata be indicative of degeneracy, and the subject so afflicted will tend more toward disease than the person not so afflicted, as is claimed, what a contribution to the science of dentistry will be given, if this can be proven by devotees to this department of our art! Standing upon the threshold of hope, we shall anxiously await the results of this new outlook.

Comparative dental anatomy is a science the importance of which is slowly but surely dawning upon the dental profession. At the risk of being misunderstood, I venture the assertion that the great body of American dentists have advanced but little beyond a high ideal of office practice. This is reflected in some of our best dental societies, when we hear the remarks upon scientific

papers, to the effect that "that is not practical, etc., etc." As a distinguished member of our profession truly says, when one studies the human teeth with the view of making the knowledge serve the ends of a vocation in life, it is merely professional study; but when one commences an examination of the general subject of dentition that the area of human intelligence may be broadened, that is real scientific work. But few of our dental schools have considered comparative dental anatomy of sufficient importance to add it to their curricula. But I sincerely hope to see, before the close of the nineteenth century an awakening along this line and more deference shown so important a basic principle of true dental science. Men of mental training and studious tastes and habits are entering the dental profession, and they demand a broader teaching than they have received in the past; they desire to be real professional men in the fullest sense, and a good proportion desire to explore the field of pure cognate sciences. The dental colleges should stimulate that desire. Comparative dental anatomy occupies an important place in the scale of the sciences, and yet there is not an accepted authority upon these subjects in our ranks to-day. We lay claim to a part of the broad field of science. It is our opportunity to cultivate it, and the world will hold us responsible, if we neglect it. The great discoveries made in this department must be made by us, or ours is the shame. Our dental schools should and must offer the stimulus and opportunities to those who are to illume this special portion of our scientific field.

Hypnotic suggestion for the amelioration of pain, is an outlook of which we have reason to expect much. The results of experimenters in psychological laboratories have caused the skeptical world to halt in its flippant disposal of this department of science, and forced a respectful recognition of what promises to be a boon to humanity. Psycho-therapy, or suggestion, or call it by any other name—is destined, I believe, to be a useful product of the army of investigators, who are to-day toiling in the laboratories throughout the world. When reduced to a science, the art of its application will be appreciated by no class more than by the dental profession. Psychologists tells us that pain is not a condition per se, but the conception of a mental or bodily injury. If this proposition be true, you cannot fail to see some of its far-reaching results. If you shut off the *perception* of an injury, pain will not exist. This hypothetical declaration has been demon-

strated to the satisfaction of many persons, many times. This statement, then, under proper conditions seems to be true. If it be truth, how eagerly we should seize upon any instrument for its demonstration. When we consider that impressions made upon the minds of our patients are those suggestions which are made through the five senses, we can begin to perceive the vast import our manner, address, personality, and character bear to the mental suggestion sustained by the patient. The introduction of psychotherapy into the practice of dentistry, by those who understand its principles, if it effect no better result, will at least induce a mastery of self and patient by the creation of an atmosphere in which the patient has the fullest confidence of the operator, and vice versa. Immunity from pain by suggestion is possible only under these conditions. I greet this new light at its dawning with a hearty welcome, trusting to the ever onward tread of science to bring new light, new hope, and as each throb of expectancy wells up in an anxious breast, some new truth for the relief of suffering humanity.

One of the tendencies of our day is toward preventive medicine, and our hope for a very wide curtailment of suffering and a large saving of the teeth to the human family is largely dependent upon the development of this tendency. If only the people can have an elementary knowledge of the human body, and of such principles of hygiene and sanitation that exist under the increasingly complex conditions of modern life, they may be able to guard against common forms of infection and against unwholesome modes of life and many ills that follow as a consequence. It seems to me that here the public schools have great responsibilities. If the public schools will respond to the growing demand for a larger knowledge of the structure and working of the human frame, we can confidently hope for the installation of competent dentists into the schoolroom, who may make examination of the mouths of the children and advise them as to the correction of any pathological condition that may exist. It will also afford a fruitful source for the collection of data upon a wide range of subjects, the importance of which cannot be overestimated.

These outlooks, notable enough though they be for any age, are to be solved only by such patient research and guarded inference as all science has learned to trust, and the only chance for the full and speedy fruition of our hope in them lies in the zeal,

ambition, and honest endeavor of our profession to convert these outlooks into realities, to become the common property of the profession. Of course shadows here and there will linger still. One and another for some time to come will invest his calling with puerile practices which were fostered in ignorance, while quacks will flourish, and more or less well-meaning persons will become their patrons. But after all, when dentistry is once placed where it belongs, close to its sister disciplines, from which it gathers light and in its turn inspires, the shadows are certain soon to fade, and the truth to prevail. Our responsibilities, then, become the greater to see to it that these outlooks become the handmaids of our science.

Let us then heed the inspiration given us by Turgot, who says: "In directing the forces of your mind to the discoveries of new truths, you fear to go astray. You prefer to remain quietly in the opinions most generally received, whatever they may be. That is as much as to say that you should not walk beyond doors, for fear that you might stumble and break your legs. But in that case you are in the position of him whose legs are already lamed, for yours are useless to you. And for what has God given limbs to man, if not to walk with them, nor given him reason, if not to use it? It is not error that opposes so much the progress of truth; it is indolence, obstinacy, the spirit of routine, everything that favors inaction."

DISCUSSION.

Dr. C. B. Rohland: It gives me pleasure to welcome among us a new writer. I believe Dr. Bentley is an acquisition that this society made only last year, and the talent displayed in this paper, if it be coupled with industry and the painstaking effort that the paper exhibits so effectively, it will undoubtedly make him a very valuable member.

The faculty of writing is of course a gift in many cases, at the same time, it is a talent that can be cultivated, and I trust that the new members we are taking in will do what they can toward cultivating the faculty of putting their thoughts on paper.

It is an education in itself, and if faithfully done it will be the means of doing a good deal of good. For the benefit and encouragement of those who feel that they have no faculty in that way, I may say that he who is able to write the most glibly and the most easily is not always the one who will write the best papers. The one who has to work hard to put his thoughts on paper is very apt

to give us a better digested and more valuable article than the one who writes easily. I say this for the encouragement of those who may think that they do not possess the faculty of writing.

Now as this paper is largely speculative, it would be difficult to criticise its prophecies. It is always safe to look with confidence to the future for advancement and progress beyond normal expectation. The field of investigation that lies behind us is limited, that lying before us is boundless. It is never safe to say that the wildest and apparently the most absurd dreams and prophecies may not be fulfilled some time. Each new discovery opens up such vast vistas of possibilities that imagination usually runs riot as to the future. And who will undertake with certainty to sift the chaff from the wheat? When the Wizard of Menlo Park gave to the world a deeper insight into the characteristics of the electric current, and opened new channels for its application the public imagination was fired. How many seemingly absurd fancies have since been realized? At this very moment the world is in a fever of expectation over the vast possibilities just revealed of the cathode rays. The apparently impossible has so often been realized, that when a new epoch such as the present is made, there is a general attitude of eager expectancy, and the wildest dreams are listened to, at least, even if they are not accepted.

It would be rash, in view of all this, to say that hypnotism, to which the essayist looks forward with so much hope to assist us in alleviating suffering, will not in time become a valuable ally. Indeed I am quite willing to believe that its present limited sphere of usefulness will be extended. Bernheim, Charcot and others seem to have given us something tangible to work on, but practically the subject is still but little understood, and it is quite probable that the force we are dealing with may have within it some elements of danger. Experimentation along this line should proceed with caution. This is no field for reckless enthusiasm. The young practitioner, who still has his standing and reputation to establish, who still has to win the confidence of the public, not only in his skill, but his moral character as well, must remember that there is a well-defined dread in the mind of the public of both hypnotism and hypnotist.

The essayist has made one statement that probably is more sweeping than he really intended, viz., that but few of our dental colleges give comparative anatomy a place in their curriculum.

This is I should say hardly in accord with the facts. There may be a few who do not perhaps give it all the attention its importance merits, but I am quite sure it has a place in the curriculum of every reputable college. If the essayist means that the instruction in this branch should be more exhaustive, this proposition too will I think admit of question. It must be remembered that the time of a course of instruction is limited. Many branches must be covered. The student is simply put in the way to continue his studies. The college course is only the vestibule to the temple of knowledge. No branch can be pursued to its limit during an ordinary college course. That is a work of a lifetime.

The essayist expresses the belief that each public school will some day have its dental examiner. Theoretically it might be productive of much good to have periodical dental as well as medical examinations of the public school children, but there will be no harm in familiarizing the public with the idea. But public sentiment is a hard thing to control. The people are restive under any law that they imagine has a tendency to interfere with liberty of action. The American mind does not take kindly to paternalism in government, even if it is clearly for its own good. Take a public, of whom perhaps less than one-tenth ever seek the advice of a dentist, and one can readily imagine what the effect would be were dental examiners installed in our public schools, and the children compelled to submit to examination, and if the teeth were found defective, compelled to have them repaired, before they were permitted to enter, for simple examination without being coupled with subsequent repair would do no good.

The attempt to incorporate such a provision into our laws would meet with failure, and under present conditions in my judgment, deservedly so.

While I am on the floor, I wish to say a few words about the methods of conducting our discussions. I take it that the reason there is some member assigned to open the discussion on a paper is that he may have an opportunity of looking over the paper in advance, seizing its salient points a little better perhaps than could be done while the paper is being read, and in that manner direct the discussion into better channels and keep it within bounds. This paper was handed to me yesterday, but was called before I had an opportunity to look it over, hence I have not given the subject that thought that I otherwise would have done and that its

merit deserves. This set me to thinking, and I believe it would be well for us to have abstracts of all papers that are worth bringing before the society, incorporated in the programs that are sent out so that all members may have an opportunity of following the line of thought of the paper and the position taken by the writer. I think this would be the means of stimulating greater interest in the papers that are read. Very frequently a paper is announced by title, and we have very little idea of what its author is going to talk about. Indeed, it is simply guess work. Again, some of our members are not as good readers as the present essayist, so that it often is no easy matter to follow them. It seems to me it would be an excellent idea to have a short abstract of each paper distributed among the members with the programs before they come to the meeting, thus giving them an opportunity of noticing the line of thought to be treated. All of us would thus be better prepared to speak on the subjects that are discussed. Another point. Very many are not able to speak offhand or think they cannot, and so do not speak at all. If they could write out or think out their remarks beforehand many would be tempted to take part, who now only listen. These remarks may not be very pertinent to the subject of the essay perhaps, but I am quite sure if the suggestion were adopted, it would make another "new outlook" for the interest of our discussions.

Dr. Newkirk: I do not want the closing remarks of Dr. Rohland to pass without some criticism. I don't believe that his idea of furnishing abstracts of papers to be read to the different members beforehand is a good one. It is my opinion that half the interest in the papers would be lost. Supposing forty of our members should come with written subjects prepared from abstracts, where would our sessions run to? I think the spontaneity of the thing, the way a paper strikes when it is read, and the discussion it elicits at the time, are altogether better than a cut and dried arrangement, such as the speaker suggests.

Dr. E. Noyes: It is evident in my mind that Dr. Newkirk has not been chairman of the executive committee. He does not seem to have any idea of the difficulty of getting forty men to write something for this society. It seems to me that the suggestion of Dr. Rohland is a good one, and that a knowledge beforehand of the subject matter to be discussed would promote the interest and value of our proceedings. The object of these meetings

is to get a careful expression of the matured opinions of the largest possible number of men, and the only way that can be done is to contrive some plan of enabling our members to study beforehand what they are going to say, and I can think of no better way than the one suggested. It is a method in common use in a great many societies and is eminently practical. There is one other point that occurred to me, namely, that the discussion of papers in this society should be, and I suppose is understood to be, a discussion of the subject of the paper and not necessarily restricted to its subject matter; that is to say, if any one desires to get up and take an entirely different line of thought or outlook into the future of dentistry from what was taken in the paper it is a legitimate discussion of the subject.

Dr. A. W. Harlan: I do not like to take up so much of the time of the society, but I think that it is only due to the author of the paper, who has spent some considerable time in its preparation, that the subject presented should be touched upon by some speaker on the floor.

In looking over this paper I notice that reference was made to some of the original work done by Dr. Black many years ago under the title of the "Formation of Poisons by Microörganisms," although it is not so stated. I go back farther than the author of the paper does, namely, to the beginning of serum therapy. The influence of that work on the development of the dental profession at large is just beginning to be felt. Before that time the little knowledge that we had with reference to the production of dental caries was comprised in the theory of Robertson, in the work of Leber and Rottenstein, and that of Magitot, and the theory of the late Dr. George Watt and some work of Underwood and Milles. Of course there may have been other theories with reference to the production of dental caries, but these were the principal ones. After the publication of Dr. Black's work on the "Formation of Poisons by Microörganisms," the experiments of Miller were presented to the world, in which it was clearly shown, or at least it so far has not been disproved, that dental caries was really the result of the agency of microörganisms, and so from that time we have had a basis to rest upon. If Dr. Black had never done anything else in the world than to produce his little work on the "Formation of Poisons by Microörganisms," this society might well be proud of him. (Applause.)

One of the subjects touched upon by the essayist was a plea for the establishment of chairs in dental schools on comparative dental anatomy. In a few instances here and there lectures are delivered on comparative dental anatomy. The student has his zoölogy and comparative anatomy before he enters a school, and so unless the chairs are to be established for the purpose of instructing those who have not attended a high school, the absolute necessity of their being founded in dental schools is not apparent to me. Pretty soon all of our prospective graduates will be bachelors of philosophy, or bachelors of science, or doctors of philosophy, or bachelors of art. When that time comes they will have had a good smattering of science before they enter our colleges.

Hypnotic suggestion was also spoken of as one of the new outlooks in dentistry. Somewhere during the reign of Louis XVI, or thereabouts, a gentleman by the name of Mesmer, of Paris, practiced hypnotism, not exactly on the scientific or medical lines that it is to-day. We are just beginning to feel that perhaps hypnotism might have a place in the practice of dentistry. I have not investigated the subject of hypnotism to that degree which would enable me to talk for or against its general use in therapeutics, but it seems to me that if it is to become a part of the armamentarium of the dental surgeon, that the dental schools should give a short course of lectures on this subject from a strictly scientific standpoint, according to the knowledge that we have of it at the present time. Then before dental societies we will not scoff at it, or turn our noses up at it, or say we do not believe in it, because what is known will have been presented to our students and they will have a correct understanding of it and will have read something about it, and then it can be considered properly. I presume that there are a great many persons who would be good subjects, but to advise the indiscriminate or the general practice of this agency in dentistry would be very injudicious. In France they have enacted laws to prevent the use of hypnotic suggestion except under what is called proper medical surveillance, and I think that until it begins to be a subject that is taught in our schools and colleges, the societies will do well to read up on the subject from the present acknowledged authorities, such as Bernheim and men of his class.

Facial orthopedia. In this subject we have something that is practical. It is only within a very few years that any considerable attention has been paid to it, and I am very glad to say that men of

talent and ingenuity are devoting themselves to this branch of mechanical surgery, which is certainly a great advance over the methods practiced up to a short period ago. I believe that Dr. Kingsley in his work on "Oral Deformities," denominates it a branch of mechanical surgery, and I think it is a good way of speaking of it. It is certainly in the hands of good men, such as Angle and Case, Jackson and Farrar, and some others. They are certainly doing great good in the way of improving the facial expression of the present generation throughout the world. I think one of the most interesting chapters in the transactions of the World's Columbian Dental Congress was that devoted to the pictures of appliances and the deformities by Drs. Case and Jackson. I have had my attention called to them many times.

Going beyond the paper, are there not some other outlooks in dentistry that may be considered new? I was going outside of the points presented in the paper. The paper did speak something of prophylaxis in dentistry. Are we doing our whole duty as members of a branch of the healing art in prophylaxis or in preventive medicine. I enter the halls here from day to day and notice various exhibits of proprietary remedies and preparations, the exact composition of which we are thoroughly unacquainted. I say to myself, what are we doing. Is this in the line of preventive medicine? Can I prescribe something as a prophylactic when I do not know what it is? I should say that there was a large field for men in the compounding, the commingling, the gathering together of known substances in definite quantities that can be used for nasal, oral and pharyngeal prophylactic purposes. Nearly everywhere somebody gets up and says I do so and so. I use "jumboline," "tumboline," or some other thing, and he loses his absolute individuality in prescribing medicines, the composition of which he knows nothing.

Dr. C. P. Pruyn: The essayist quoted from some author, who says that pain is not a condition *per se*, but the mental perception of an injury. If we as dentists could apprehend and comprehend fully the meaning of these words and use the knowledge thus gained in our practice, it would be of great benefit to our patients. Pain not a condition *per se*, but the mental perception of an injury. That injury may be physical or mental. We might ask which is the greater suffering in life, physical or mental pain? Those who have suffered some severe mental anguish would say that mental pain is by

far the most severe, no muscles or nerves being engaged to cause pain, but there was the mental perception of an injury. We have all experienced feelings of an injury at some time or other. We have been slighted or snubbed, as they say, and we have been greatly injured. Our appetite, our digestion has been interfered with for days or weeks, perhaps no physical injury, but the mental perception of an injury which was very severe indeed. If we can so understand this and convey it to the minds of our patients that pain is not a condition *per se*, but by using our mental power, making our mind stronger than the body, so that we may overcome our physical suffering, as we can to a large extent, we will be public benefactors to those who come to us for treatment. This can be done to a considerable extent. It does not require very much study, thought, or reading to help along on this line.

There is a grain of truth in Christian science, in faith cure, and in all of these fads that have been going through the world for the last ten or fifteen years. There may be a bushel of chaff to one grain of wheat, but we should throw away the chaff and take advantage of the wheat. If there is any good in it we should find it out and use it.

Suggestion is a force which practitioners can use in the treatment of disease. I think I may safely say that there has never been a successful practitioner of medicine from the earliest days to the present time who has not used suggestion as one of his strongest remedies. You use it every day without doubt in the treatment of your patients. You suggest to your patient that he or she is not going to be hurt by a certain operation. You instruct the patient to lay back and relax herself thoroughly, and if she does this the operation can be performed without much trouble. If the patient can place herself *en rapport* with the operator, the work can be done in an easy way and the patient will go away from the office materially benefited by the operation and very much refreshed. I consider that this is done in your offices every day in the week, mental suggestion. If we can suggest to the mind of our patient, why can we not also use auto-suggestion ourselves for our own use and physical benefit. It can be done very satisfactorily. Sometimes our duties are so arduous that we become fatigued. Why not by auto-suggestion rest quietly, relax the parts thoroughly for two or three minutes during the middle of the day. Banish every thought of the work in hand from your

mind. Instead of taking a nap of two or three hours, in a few minutes' time you can get a physical rejuvenation which would otherwise take three or four hours to produce. This is not something that is beyond the range of reason. It is being used by many men every day. It is simply common sense, I do not care whether you call it hypnotism or suggestion. I am using it, but I never suggest the term hypnotism to patients, simply because there is in the minds of many a prejudice against that term. If I use any term at all, it is suggestion, and it is and has been of great service to me.

Dr. J. W. Cormany: While we are on the subject of hypnotism I am going to give my experience of it. While I was preparing a cavity for a patient and had nearly completed the work, I suggested that it would hurt a little, and as quick as a flash she flew up and said, "What did you tell me that for. You have not hurt me a particle up to this time." She was a Christian scientist and had hypnotized herself up to this time and I spoiled it all.

Dr. D. E. Coulson: I am not in the habit of making my voice heard in public, and this is my maiden effort, and I congratulate myself on the thought that I shall make it in discussing a paper which I consider ably written and grandly presented. I have been attending the meetings of this society for about fourteen years, and it seems to me it would be impossible for any one to attend these meetings without absorbing quite a good deal during that time. I believe that there is a mental law which requires the person to give off what he receives in order to remain in a healthy condition. I suppose that I was called on to participate in this discussion because I have been slightly interested in the subject of hypnotism. I have had a little experience with this agency, and I do not think I could do better than to tell you why I took up the study of it. In the first place, I have quite a number of patients who were Christian scientists. Some of them were mental scientists and I began to read along that line of literature. I got hold of one of the books written by Dr. Prentiss, of Chicago, who treats all manner of diseases through the eye, and we had persons from our town who took treatment of him, gave a large fee and were satisfied. One man gave him $500 and was never better satisfied in his life for the results he secured. And the subject presented itself to my mind in that way, and I thought that if all these isms are getting results, through what mediums are they securing them?

And I have been able to satisfy myself partially by a study of mental laws. To what extent these will be applicable in dental operations I am not able to say, but that it has been a benefit to me I am absolutely certain.

The past history carries out the suggestion that nothing new is presented without opposition. I believe that in order to get the most out of life or out of the investigation of any subject we should allow that freedom which is frequently withheld. I do not know that my experience, or any part of it, would be interesting or profitable to you.

As far as hypnotism as a means of anæsthesia in dental practice is concerned—that is, perfect anæsthesia—I believe it to be a failure. I think the works on hypnotism only give us about 28 per cent of the subjects that may be hypnotized. But as an aid in allaying pain or dread, which is a very considerable factor in our work, I believe it is of great value.

Dr. Newkirk: Dr. Cormany's little story reminds me of an experience of my own, which fully convinced me of the value of faith cure, and power of the imagination. I had a patient two or three years ago, a lady who had made a study of this matter, and at the close of a series of operations she told me that she had been treating herself by faith cure, or mental processes, while the operations were going on; and that whereas she had formerly suffered a great deal, this time she had not suffered at all. I will say further for this lady that she is thoroughly consistent in her logic. She carries the application of her principles into business matters. She imagined she had suffered no pain; she also imagines now that her bill is paid. (Laughter.)

Dr. C. E. Bentley (closing): I do not know that there is very much for me to say other than to thank you for the complimentary manner in which you have received my paper, and also to apologize to Dr. Rohland, who opened the discussion, for not having furnished him with an abstract of my paper in advance of the meeting. I think, however, the suggestion that he made is a good one. It would add interest and merit to the discussions, and in my opinion would stimulate a great deal of thought that would otherwise not be brought out by virtue of the fact that one does not have an opportunity to prepare himself.

In reference to comparative dental anatomy in our schools, I want to say that I conceive it to be one of the basic principles that

underlie the study of dentistry, not the comparative dental anatomy as is taught in the schools, as has been spoken of by the gentlemen who have preceded me, but comparative dental anatomy as it pertains to the evolution of teeth coming from lower animals and developing into the species, man. That is a broader thought than a mere technical study of comparative dental anatomy.

When we commence to understand that a possible explanation for dental irregularities lies in the study of comparative dental anatomy, we will begin to see the relativity and the practicability of the subject as it pertains to dentistry. When we consider the osseous deformities which have been called to our attention by criminologists, and whose investigations and experiments have recently contributed so much to our knowledge, particularly in the case of H. H. Holmes, we must confess that results have been startling along that line, and that it is possible for the osseous structure to be changed entirely by virtue of a mentality that has gone off in a degenerate direction. Such things are within the realms of possibilities of to-day, and we are standing upon the threshold of a new outlook in that particular direction. What is applicable to disease also applies to the osseous deformities of the teeth and their associated parts, the jaws. It is with this end in view that the teaching of comparative dental anatomy in our dental schools will be of consequence.

With reference to hypnotism the ground has been so thoroughly covered, that I shall have very little to say regarding it other than that the law cited in the paper and endorsed by Dr. Pruyn, if understood, means a great deal, and psychologists, men of science who experiment a good deal, tell us that pain is not a condition of itself, but is the mental perception of pain. That law has been demonstrated time and again in the army. Men engaged in war, have been shot through and through, and never knew they were hurt until their boots were filled with blood. The moment we perceive an injury, that moment we also perceive we have pain.

The word hypnotic has an odium attached to it that is in disfavor at present, but that should not deter us from looking into this question and getting the truth out of it. Hypnosis can be carried to the sleeping stage. Futhermore, it does not necessarily have to be carried to the sleeping stage, at which point it is equally as potent in the relief of pain. It has been my pleasure to keep at

this subject, simply to see what is in it for the purpose of applying it to the patients who come to me for relief, and I have been astounded with the results that a novice can get in the treatment of some cases that have come to me. The fixation of attention is simply a suggestion to a patient, the extent of which can go so far as to relieve a patient of pain for the time being. That is mental suggestion. The word mental suggestion, or psycho-suggestion, which is a more scientific term than the word hypnosis or hypnotic, is induced by the operator to prevent the perception of pain.

I want to make this broad statement:- There is not a man in this room who is considered a successful dentist in all that the word implies, who does not practice hypnosis, consciously or unconsciously, to a greater or lesser extent, and in proportion as you utilize this agency in your dental work, so will your practice materially enlarge. That may seem a wide statement, but it is my belief.

In reference to what has been said of Mesmer by Dr. Harlan, if I have the proper understanding, mesmerism or hypnotism are two different things, and they do not belong in the same category other than that possibly one may be a branch of the other.

This is a subject I ask you to look into, to read up, and I think it will be a profit to all of you if you so do. I thank you.

# SHOCK.

By Garrett Newkirk, M. D., Chicago.

I am not aware that a paper upon this important subject has ever been read before this society. Of course, it has often been touched upon incidentally in discussions relating to the infliction of pain.

It has come to my mind frequently in recent years that possibly we were not so generally cognizant with the subject and its special bearing upon dental practice as we should be, and that a fairly clear statement of the question, followed by the able discussion which some of our members are so well qualified to give, could not fail to be profitable.

One of the best articles upon the subject which I have ever seen is that contained in the first volume of the "American System of Dentistry," division of General Pathology, page 719, written, as you know, by one of our own number, Prof. Black. I shall take the liberty in this paper to quote from this article somewhat freely.

Dr. Black's definition of shock is as follows: "Shock is a sudden and notable depression of the vital powers resulting from an injury more or less grave, or from an impression made on the nervous system through the medium of the sensorium, as by fright, sudden and overpowering mental emotion," etc.

We may say, to enlarge a little upon this definition, that whatever is capable of producing a sudden and profound impression upon the mind, or upon the nerves, may result in serious shock; that any sudden impression which causes more or less pain, or abnormal disturbance of the circulation may be said to be of the nature of shock.

The state of prostration which follows upon one overpowering blow, whether the blow be primarily mental or physical, may also be induced by a large number of successive small shocks extending over a considerable time, as of several hours. The term *collapse*, as it seems to me, is not synonymous with *shock*, but belongs rather to the last stage or the sequence of shock.

In the domain of general surgery shock is a matter of grave importance. Here it may be divided into two classes: 1. Shock produced by accidental injuries which require the attention of the surgeon. For a long time it was a matter of common observation, but not understood, that injuries of a certain class were often followed by collapse and death. That in other cases injuries more extensive were followed by speedy reaction and recovery. This was specially noticeable in the department of railroad surgery, where instantaneous crushing force is so often the cause of injury. To these observations, probably, we owe much of the more recent development of thought in this direction.

2. A surgical operation, undertaken though it may be for the relief of injury, is itself to be considered as an injury in relation to shock.

The idea of shock must not be confounded with that of pain. They are often associated, but they are distinct and separate things. The injury that produces shock may at the same time cause pain. The sensation of acute pain, or the mental fear and dread of pain, may and often does induce shock; or the shock of pain or of emotion may be added to that of physical injury.

But the victim of severe and dangerous shock may be entirely unconscious of the injury received. He may be stunned by the same force which produces the lesion, or in such a state of excitement as to know no pain, and yet be found within a few moments in a state of collapse. Here the discovery and general use of anæsthetics has been of great value, in that it has made it possible to subtract the elements of emotion and sensation from the sum total of shock impression. However, this subtraction is not without possible counter-addition in that the anæsthetic itself may have serious depressing influence, so great in some instances as to overbalance its benefits.

Yet, again, we are justified in assuming that the anæsthetic, by its effect on various nerve centers, modifies the essential shock of the surgical operation, so that on the whole the value of anæsthesia in operative surgery as a modifier of shock must be very great. It is probable that we do not appreciate this fact as we ought in our estimate of anæsthetics. Let me quote from the words of a surgeon who himself was compelled to undergo an amputation:

"Suffering so great as I underwent cannot be expressed in

words. The black whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget, however gladly I would do so. In spite of the pain, my senses were preternaturally acute. I still recall, with unwelcome vividness, the spreading out of the instruments; the first incision; the fingering of the sawed bone; the tying of the blood vessels; the stitching of the skin; and the bloody, dismembered limb lying on the floor. These are not pleasant remembrances, and could I even now, by some Lethean draught erase them, I would drink it, for they are easily brought back, and they cause a disquiet which favors neither mental nor bodily health."

Another has said, "Truly, before the days of anæsthetics the patient preparing for an operation was like a condemned criminal preparing for execution, and in many cases the foreboding was just; exhausted by pain and dread, the victim died under the knife. In vain surgeons assured the world that 'pain should be considered a healthy indication,' that 'pain in the majority of cases is even desirable, and its prevention hazardous,' that 'it was a trivial matter to suffer,' and that 'pain has always its usefulness.' Human nature, unconvinced, shrank increasingly from the agonies of surgery."

Let me say here, parenthetically, that there is another point in this connection of which we think too seldom; and that is the different influences of the old and new conditions on the surgeon himself.

The great surgeon, Cheselden, has left on record these words: "If I have any reputation I have earned it dearly, for no one ever endured more anxiety and sickness before each operation."

Undoubtedly his anxiety would have been much less, his sickness mostly avoided, the state of his mind and nerves far better, chances of success greatly increased, could he have used anæsthesia. Verily, surgery was heroic then in more than one sense.

For the study of the question as to what shock really is, or may be, what changes, molecular and otherwise, take place in consequence, I cannot do better than to refer you to the article of Dr. Black already mentioned, which I hope you will all read once again at your first opportunity.

I will only refer to one or two leading propositions, for it is

my purpose, as before intimated, merely to open up the subject rather than to discuss it in any direction exhaustively.

First, as to molecular changes and impressions. Undoubtedly, special changes and impressions are made in every instance. Usually, they are not of great importance, and scarcely enter the domain of the pathological. But they may, and perhaps they do oftener than we suspect. To illustrate, let me relate one instance recently come to my knowledge, that is of special interest to the dentist.

A gentleman in Chicago has a sister residing in another city of whose experience he gave me the following account:

Some twenty years ago she was in the dental chair for three or four hours at one sitting. During this time she was kept practically in one position, with her mouth continuously open. The operations were painful, but she was determined to endure them to the end, which she did by the full exercise of her will. At the end of the sitting she was in a state of collapse. She was ill for weeks. But the unique feature of her case is this: The most distressing symptom at the outset was difficulty of swallowing, and she has never since been able to take solid food. From that day to this, she has been compelled to subsist on a liquid or semi-liquid diet. Now it is evident that in this case there must have been produced a definite and continuing modification of structure in some central ganglion.

That many patients are thus affected by what I may call the *accumulative shock* of dental operations there can be no doubt; not often to the same degree perhaps, not many so peculiarly, yet to an extent more serious than we are apt to suspect.

I have in mind now two persons, a mother and her grown up daughter, neither of whom can endure ordinary dental operations without shock so severe as to threaten collapse. The elder has had severe experiences of various sorts, has passed through a six months' period of nervous prostration, and all these things added to her constitutional tendencies make it positively dangerous to attempt anything more than mere palliative treatment for any dental trouble. Her daughter begged me at her last sitting to use cement, saying that hitherto at the conclusion of every series of gold operations she had been seriously ill for several days, and at one time a whole month. This leads me to say that a very important question for us to consider in everyday practice is that of

temperament and susceptibility. There is as much difference in beings of the *genus homo*, as in those of *equinus*. No one would think of treating a thin skinned, fine eared thoroughbred as he might a long haired unimpressible Potawattomie pony. Inflictions one may bear with scarcely an impression may be sufficient almost to drive the other insane. We are much inclined to treat patients as children are treated in the schools, all the same by a stereotyped plan, regardless of individualism. This is all wrong, and here we must reform.

One cannot judge of the fact or the degree of shock by the voluntary acts or movements of the patient, for as Dr. Black has well said, the patient "may be possessed of a calmness that is entirely unnatural." There may be no movement, voluntary or involuntary, to indicate that serious consequences are being evoked by the operations in progress. If the dentist shall fail to bear in mind the temperament and susceptibility of his patient, and, being all engrossed in the mechanical execution of his work, cease to be observant and watchful, he may come to the realization very suddenly that he is responsible for grave complications.

The immediate danger in shock appears to be in its relation to the vascular system. Through temporary paralysis of the vasomotor nerve centers, there is extreme dilation of the arterial vessels generally, and it is supposed that in fatal cases death results, not so much from failure of the heart to act, but because blood is lacking for the heart to act upon, and, as Dr. Black remarks, the patient "bleeds to death without the loss of a drop of blood." The heart is emptied into the relaxed blood vessels.

Therefore, the first and most prominent symptom of shock pertains to the circulation of the blood. There is first pallor of the countenance, a weak and small pulse followed by dullness of the senses, a staring eye, numbness, coldness of the extremities; lack of will and muscular power. Questions are answered by monosyllables or not at all, there is partial or complete loss of consciousness, in short, collapse.

In this connection, I desire to mention a cause of shock as I believe which has been but little recognized as such, namely, the action of drugs. I have a patient who exhibits all the primary symptoms of shock if a bottle of chloroform be opened in the room. A friend of mine has a patient similarly affected by camphor. These are examples of idiosyncrasy, but there are

agents, deadly poisons we call them, which cause death apparently by shock pure and simple. They so impress and suddenly paralyze the vaso-motor centers that the heart is bled to death by the relaxed blood vessels. Possibly this is what cocaine and other agents of that class probably do.

Having said enough, as I believe, to evoke free discussion, I will close this paper, adding only that these considerations come to us laden with caution. We must be on our guard at the chair, avoiding protracted operations with those who are unfit to undergo them, whether by reason of temperament, idiosyncrasy, nervous exhaustion, anæmia, or what not.

If a patient comes to us who has had trying experiences, unusual stress of toil, grief, anxiety, or previous illness, one whose vital tone is low, with susceptibilities acute, *beware!* Keep to the safe side and avoid *shock*. If, however, in spite of precaution a case of shock shall overtake us, our remedies are suggested by our pathology. As the great vessels of the abdomen and lower extremities are the chief reservoirs of blood in cases of shock or collapse; inversion, or semi-inversion of the body is of first consideration. Call on gravity at once to throw the blood to the heart. If this be not sufficient apply heat to head and spine, hands and feet, ammonia to the skin and nostrils or internally, kneading of the muscles, etc., etc. Electricity, if available, might be useful when other means prove inefficient. But, as dentists, *avoid* producing the condition, and remember first of all that our greatest danger lies in the line of accumulative causes that belong to prolonged sittings and exhaustive operations.

I believe that the great majority, if not all, of dentists are guilty more or less of malpractice in this direction.

Patients not knowing themselves, request or even demand prolonged sittings which ought not to be given them. Mothers bring their daughters, semianæmic it may be, at a critical time of life, and ask that we shall do a certain amount of work for them in a limited time. We operate for one of these, say thirty or forty minutes. She endures so much very well. But we may see if we are observant that she has about reached the limit of nervous endurance for that time. If we discharge her now, she will easily recover from the limited shock experienced, and she will return cheerfully for her next appointment. But the mother says, "I am anxious to get through with this work. I cannot spend so

much time for short sittings. While she is here put in another filling." If we say *No* ! we deserve a medal. If we yield to please the mother, and because we have the time which we should otherwise lose, we deserve to be horsewhipped.

But it even more freqently occurs that the mother will ask or demand for herself operations beyond the limit of prudence.

It is my opinion that extra susceptible children or young people should not be kept in the chair as a rule more than half an hour at a time. Adults (usually they are women) not more than an hour, as much less as may be. We prepare too many cavities and fill them at one sitting. We do not use temporary stoppings of gutta-percha as frequently as we should, waiting for recuperation from shock. We think possibly not too much of teeth, but too little of the individual behind the teeth.

DISCUSSION.

Dr. C. N. Johnson: I am very glad indeed that a paper on this subject has been presented to this society by Dr. Newkirk.

As to Dr. Black's definition of shock; if shock is invariably sudden, then we have another condition quite as serious in its ultimate results and occurring more frequently in dental practice than in true shock, and that is the nervous depression, following protracted sittings, which possibly may not have entailed much pain. Patients will sometimes come to us and endure a sitting and leave the chair apparently in good condition, saying that the operation has not been particularly painful. They will come back in a few days and inform you that after they had reached home they were very much depressed as a result of the operation. This depression does not come on suddenly, but it leaves a definite effect so far as the ultimate results are concerned.

Dr. Newkirk also says that collapse is not synonymous with shock; that it is a sequence of shock. If this be true, we must have collapse without symptoms of shock at all. We have this condition I referred to more than any other enumerated in the paper. The doctor spoke of cumulative shock, which I think explains the condition better than any other term. In this connection, as the essayist has truly said, dentists are in the habit of prolonging their operative work. Sometimes patients are unnecessarily subjected to long operations of great severity. I recall one instance where a lady went to a dentist, who is a brilliant operator,

but who, unfortunately, has no consideration for the feelings of his patients. She had always submitted to dental operations without murmuring. She had perfect control of herself, and acquiesced in the judgment of her dentist. She was willing to stand any reasonable amount of severity and had really at times suffered much at the hands of this dentist. But this time she was in the chair a little longer than usual, the nervous equilibrium overbalanced and the result was collapse She left his office apparently in good condition, but when on the street began to succumb. She went to a drug store, secured some brandy, and drank it as rapidly as she could and in considerable quantities, but it did not have any effect on her. She has never been the same woman since that operation and never expects to be. We should exercise some judgment and care and humanity in our operations instead of being invariably heroic. I believe in performing a permanent operation in every instance where we can do so with judgment. But if I were to select between a permanent and temporary operation, with the danger of causing my patient shock or any condition that would result in collapse from a permanent procedure, I should prefer some temporary means until the patient was in a better mental and physical condition to stand a permanent operation. I should study the characteristics and peculiarities of the patient in order to operate intelligently. If there is one thing I have to congratulate myself on in practice it is this, that I have never sinned extensively in that direction. I never give long sittings. I do not believe it is very often necessary in the performance of the average dental operation to give a sitting longer than one hour. I have repeatedly made that statement and it has been considered a mistaken idea that we could put in the average filling in an hour. But I tell you I would rather concentrate my energies and pay particular attention to my operation, make every move count and expend more energy of my own to accomplish a given result in a short time than to keep a patient sitting in a chair two or three hours. The strain of sitting in the chair is very wearisome and trying to many patients, even when little pain is given.

Dr. G. V. Black: I have but a few words to say and most of them in reinforcement of what has been said. In reference to the terms collapse and shock, I will say that in capital surgery a distinction is scarcely made between them. They are used synonymously, and yet it is recognized that we have a character of shock

which is not properly collapse, hence the term collapse is confined to the graver cases of shock, or the graver conditions occurring in shock. Cumulative shock is a good term, particularly in dentistry. Shock of the character that gathers force from time to time, or from hour to hour, is met with most in dentistry, and I fear very much that these forms of shock often pass unrecognized by the dentist. I presume my practice is a little bit different from that expressed by my friend, Dr. Johnson. When I have placed my patient confined to one position during an operation, I lose no time. For instance, I have prepared my cavity so far that I want my rubber dam on; I may give my patient some time before I put the rubber dam on; affording some relaxation from what I have been doing. But when I have put the rubber dam on every edge must cut until it comes off, and then my patient is relieved, is relaxed again. In this way we may carry out operations without great exhaustion, operations that would be very exhausting to patients if continuous. We may do a considerable part of the preparation of the cavity with the rubber dam off, giving the patient intervals of relaxation. Then, as I say, when we put on the rubber dam and confine the patient to a certain position, we should lose no time until we are through and take it off again, giving the patient relief and relaxation. Many dentists confine their patients to the chair too long and do great injury; also they neglect important advice to the patient after a necessarily tedious operation. Generally if we are observant about the condition of the patient at the close of an operation, we will find that it is often of the utmost importance that she or he assume the recumbent position as soon as possible and retain it for a number of hours. Go immediately home and lie down, for it is in this position that in cases of minor shock the circulation will be most perfect and recovery the most prompt, and the patient will not suffer the next day or two from depression as she would do if she retained the upright position after the operation.

Again, in the matter of frequency of operations many of us are doing our patients harm. The average patient should not have a sitting more than once a week, and in the case of many patients the sittings should be divided as much as two weeks. I know there is some difficulty in carrying this out. I have to scold continually and put my patients off perpetually in order to do them justice, and in order that they may return to me in good condition

for operation. It makes a world of difference whether a patient is in a bad or good condition when they go into the dental chair. It makes a difference to the patients themselves, and it certainly makes a difference both to the operator and in the operation itself. There is not a man in this room but what can make a better operation when he finds his patient in good condition than when he finds him practically unfit for an operation. So I would say, give your patient as much relaxation as you can during the progress of sittings; when they must be confined to certain positions, do your operations as quickly as possible. Do not make them very long. One filling at a sitting, as a general rule, should be sufficient, if not very large, and do not make your sittings too frequent. Extend them and your patients will not have such dread of operations as they do when you operate frequently.

Dr. C. R. Taylor: In my own experience I have found that certain persons were more susceptible to shock than others. There are certain conditions of the system that make it so. For instance, I have found young people and elderly people more subject to shock and nervous depression than any other class. I have also found that where persons have suffered from the formation of abscesses, that with a simple opening of the abscess the person will collapse and faint at once, and when they come to they will tell us that we have produced but very little pain, that it was not the pain at all that caused them to collapse or to faint, as we usually term it. There are certain persons who have some peculiarity of structures of either the body or mind, and we call these peculiarities, idiosyncrasies.

In connection with the remarks made by Dr. Newkirk, I will say that I know of one case where a professional friend of mine had a patient to whom he administered chloroform on a pledget of cotton by passing it into the mouth to wipe out a cavity, and before he succeeded in wiping out the cavity she received quite a shock. There was a jarring of the nervous system, a shock such as is produced from electricity. The woman swooned away and when she came to she said to her dentist that she forgot to tell him not to bring chloroform in her presence, for she had experienced the same thing once or twice before at the hands of her father who was a physician. A great many persons are peculiarly affected by camphor. Cocaine is another drug that has peculiar effect on certain patients. I had a patient not long ago from whose teeth I was re-

moving tartar. The tissues were very tender, and I took a 2 per cent solution of cocaine, placed it on the gum, and almost as quick as I can snap my fingers, the woman swooned away. There was a shock produced to the nervous system. I had frequently used injections of the same per cent of cocaine almost indiscriminately, and had never found any bad effects from it.

The nature and extent of shock are largely dependent upon the condition of the general health of the patient. Again, there are certain operations which produce greater shock than others, such as scalds and bruises, but of course these come under the head of general surgery. As Dr. Black has said, long continued operations have a greater and more profound effect on the system than those of shorter duration, and spreading over a long time produce similar effects as do extensive injuries as in scalds and bruises.

A question I would like to ask here is this: Should an operation be continued while a patient is unconscious? Are we justified in finishing an operation under such circumstances? We have to contend with this occasionally, and it would seem to me that the best thing to do is to conclude the operation while the patient is unconscious unless unusually severe. If any of the members have had experience along this line, I would like them to discuss this point.

I had one patient who sustained a severe injury in a railroad accident. The whole superior maxillary bone was detached from the nasal process of the frontal bone to the posterior part of the maxilla. It was broken in five pieces. The patient recovered from the operation which was performed, and in the sworn testimony in a court of justice in Chicago it was proven that the woman's entire nature was changed; that is to say, she originally had a sunny, bright, lively temperament, but now became morose and easily disturbed and looked on the gloomy side of life. The shock was so great that it evidently changed the molecular structure of her whole being. She was a beautiful woman before and that might have had some effect upon her life.

Dr. Newkirk paid Professor Black a high compliment by saying that he had written the best paper on this subject that he had read. I took the pains to look over several books, such as Agnew and Gross, and I am free to say that the best article on shock is by Dr. Black as given in the American System of Dentistry. Gross seemed to me to have two ideas in reference to shock. If a patient

bled to death he would call it sanguinary shock, but Dr. Agnew came nearer to Dr. Black in giving us an explicit definition as to what shock really means. It is really a nervous condition produced on the system.

Dr. T. W. Brophy: In classifying this matter of shock we must speak of it as being mental and physical, shock caused by an impression made upon the mind, or shock caused by physical suffering. Such a case as was related by Dr. Johnson was one of mental shock, but the suffering to which she was subjected caused the physical shock. Perhaps she may recover from the physical shock, but mental shock is oftentimes most difficult from which to recover. I could not take any exception to the term sanguinary shock, because shock not infrequently comes from hæmorrhage and collapse, the most difficult form of shock to control and to overcome.

Dr. Taylor put the question as to whether it would be justifiable to continue an operation when a patient was in an unconscious state from shock. That depends wholly upon the condition that we have before us. Were it a surgical operation and the patient became unconscious, I think in certain instances further operative procedure would be justifiable. Were the operation upon the teeth it might also be justifiable under certain circumstances. Were it an operation for the extraction of teeth and the patient collapsed, possibly from the anæsthetic, further procedure might be the thing required to resuscitate the patient. I have known many a patient to be revived by continuing the operation.

As to the methods of overcoming physical shock the essayist said but little. It seems to me that no one should attempt difficult operations, especially in surgery, unless he has at his immediate command everything necessary to employ in case his patient is subject to shock. Whoever attempts an operation where the possibilities exist for shock, or collapse without having ready the means of resuscitating his patient, is taking chances that few men of experience and observation would approve of.

As to the best methods of resuscitating a patient who has sustained shock, I think the mental shock that dental patients often get is due in part to the attitude of the dentist. Some one here has said that the best course to pursue is to get the entire coöperation of the patient to allay his fear. Some member in speaking of the subject of hypnotic suggestion conveyed the idea that a certain

influence was exerted by the dentist of which he was not conscious. But the effect was to quiet the patient and put him in that mental condition which would enable the operator to proceed with his work. We should endeavor to get the full confidence of a patient, have him coöperate with us, in order that we may do for him the best that we are capable of doing. That is the first thing. If you get your patient in that state of mind you are not going to have any mental shock.

As to physical shock, there is a strain, a nervous depression always following a dental operation of any considerable consequence. In opposition to that statement sometimes people may be put under the influence of an anæsthetic without any nervous disturbance, but these cases are not common. If we have a shock of this nature we may employ stimulants judiciously, conservatively, and relieve the patient and oftentimes enable him to stand an operation that would otherwise lead to a depressed condition of the nervous system. If it were an operation where the patient was in collapse, then we need to employ active remedies. I have had a number of patients collapse from surgical operations, one particularly last winter. A child a few months old, stopped breathing for seven minutes. This was a case of collapse from the effects of chloroform. It was really a shock. The nervous system was overpowered in part by the chloroform and in part by the operative procedure. The patient was literally dead; the heart's action and respiration ceased, and something had to be done immediately. A prominent surgeon of the city was present, giving the chloroform and declared the child dead. Active measures were instituted to resuscitate the child. After the use of aromatic spirits of ammonia hypodermatically, and taking the child and inverting it, holding its heels up and head down and vigorously shaking it, the heart's action was reëstablished and its life was saved. The use of brandy in case of shock, hypodermatically employed, should always be kept in mind. It is an easy matter to make use of the hypodermic syringe, inject brandy beneath the skin, assist the circulation, and thus promote nervous energy. We should get the nerves to perform their function, then by inverting the patient the blood is carried to the head and heart and the vital parts rendered active. The nervous centers must be supplied. The heart must be supplied. When the feet of the patient are down important organs are deprived of blood, and they therefore sustain greater shock.

There is so much to be said on the subject of shock that we have not sufficient time at our disposal to fully discuss it. Dr. Johnson said that there was not a subject, from a scientific standpoint, of more interest to the dentist than that of shock, because we are brought in contact with it all the time. Our own condition has a good deal to do with the patient. Let the dentist overtax or overwork himself and become nervous and attempt to do an operation for a nervous patient, and it makes a bad combination. What he needs to do is to quiet his nerves and assure the patient that he is not going to be hurt as much as he anticipates. All of this contributes so much toward the prevention of shock. Our mission seems to be that of prevention. Accordingly the old adage, "An ounce of prevention is better than a pound of cure," is especially applicable when we come to the consideration of this subject of shock.

Dr. J. W. Cormany: I do not want this subject of shock to pass by without calling attention to the fact that Drs. Johnson and Black alluded to the matter of short sittings. Short sittings are all very well for people in the city who are near the dentists, but short sittings for those people that drive twenty miles to see a dentist are out of the question. I have had patients come to my office who have driven forty miles, and if you tell such patients that they have been in the chair over an hour, and that if you continue any longer to operate upon them, they would be greatly shocked, and I am satisfied that they would go to other dentists and have the remainder of the work done the same day. I do not claim that people in the country are superior to those in the city. Possibly they are stronger; they are in better health, and can stand dental operations better than the majority of city people can. I do not want the younger members to think that these suggestions apply to country patients. As a rule they do not. I had a young man in my chair not more than three weeks ago from nine o'clock until half past twelve, at the end of which time I said to him, "That is all I am going to do for you to-day." He replied, "Can't you do that other tooth to-day?" I told him I would do the remainder of the work some other time; that I was afraid of causing shock to myself and not to the patient. The people in the country, who come from a long distance to our offices to have work done, do not care to have short sittings. They want as much work done in a day as possible.

I agree with what has been said regarding the matter of having sittings as far apart as possible, say once a week, or once in ten days. I have tried this in the last three years and it works admirably with nervous people.

Dr. F. H. McIntosh: I think the cases cited by Dr. Cormany may do very well occasionally, but I have patients, who suffer more from the anticipation of an operation than from the operation itself. They tell me this when I am through operating on them, and my method is not to tell them of the hour of sitting, but to inform them through their relatives the day before, when the hour of sitting is to be. This relieves them entirely of the anticipation of the dental chair. I think there is a great deal in the frequency of sittings. It is detrimental in some cases. The postponement of a sitting is detrimental also.

Dr. W. V-B. Ames: I do not know much about shock except as I get it myself occasionally. But inasmuch as the trend has been largely toward the prevention of shock by the shortening of operations, I want to say something about the method I practice, but about which I must be a little cautious in stating to what extent I use it. I seldom make a large gold foil operation. I gave a clinic before this society last year, and I need not tell you that clinics are usually conducted under unfavorable conditions. My everyday practice consists of nine-tenths gold inlay work. I do not apply the rubber dam and keep it on for any great length of time in this class of work—in fact, I do not apply it in one case in twenty for this kind of operation. I make my anchorage in a part of the tooth which is not sensitive and prepare the cavity by disks, kept wet instead of using a bur in a dry cavity. I do not want to take the responsibility of recommending this to dental practitioners in general, but if there is any man here who has a taste for manipulating a soft pure gold plate and using the blowpipe in a delicate way, I feel like recommending this practice to him as a means of avoiding large operations which are bound to give shock to the patient, because in making inlay operations there is no time at which you cannot stop, put in a gutta-percha filling and have your patient come back when it is better for them.

Dr. Grafton Munroe: I know very little regarding the theory of shock, but I realize from a practical standpoint what it is, and I desire to mention a case in this connection. A young lady was in my office a short time ago and after excavating a cav-

ity, I found it was necessary to devitalize the pulp of the first superior right molar She said she was feeling very well, and that I might go ahead and make the arsenical application. I had no sooner placed the arsenic on the exposure when I noticed that she was about to swoon away. My chair was placed in the reclining position and she was relieved. Before I reclined the chair I got the exposure sufficiently covered with cotton to keep the arsenic in place. She went home and told her sister, who was anticipating a dental operation, what had taken place, and her sister nearly swooned away at home. She has been trying to come to my office for a considerable time in order to have her teeth cared for, but the rehearsal of her sister's experience resulted in quite a shock to her. Six months previous she had been suffering from nervous prostration, and was seriously affected by this rehearsal. When my patient came the next time, three or four days after, she had me excavate and remove the pulp, and on examining the adjoining tooth I found that the distal surface of a second bicuspid showed an exposed pulp which I did not dare touch at the first sitting. She said, "You have not hurt me any to-day." I made an application of arsenic to the second tooth. I do not think it is a wise thing to make a long sitting for the first time. It is a good thing to change patients frequently, and I find it works admirably. I feel very much relieved myself when I have gotten off my hands the responsibility of one patient and have a fresh one to start on. I feel refreshed myself. It is invigorating to change society. I feel as a young practitioner, that it is a good thing to encourage short sittings and thus avoid shock.

Dr. Newkirk (closing the discussion): Dr. Johnson spoke of shock and collapse. I take it that whenever we make a distinct impression, as we do in any dental operation where we produce pain, there is apt to be a certain degree of shock. At every use of the bur, the excavator, or of the chisel, if there is a distinct impression made, it is shock so far. But as a rule this amounts to but little, and even that which I have called cumulative shock in the ordinary case is not serious. But when it goes beyond the powers of the system to react, in the exceptional cases, then we have collapse. Collapse is the *disaster*, the extreme result which follows upon shock, whether immediate or cumulative. That was the idea I intended to bring out.

Dr. PRICHETT: What is the difference between syncope and collapse?

Dr. NEWKIRK: I think practically there is very little difference as we ordinarily see it, though I presume there should be a distinction made. Syncope, faintness and unconsciousness are shock effects. To explain cumulative shock let me present an illustration. You know that among the tortures of the inquisition one among the worst consisted in placing the subject in a position where he could not move, where his head was held absolutely still, then letting successive drops of water fall with regularity upon the same spot. The drops of water for the first few minutes produced but trifling sensations, but in the course of hours they became worse than ten thousand deaths. It was cumulative shock. There is something like this in long continued dental operations. We know patients who endure well for a short time, but beyond that they cannot go without serious suffering.

A point I tried to emphasize, was the difference in cases. There is very little danger attached to the treatment of the majority of our patients. They stand operations well. They will probably stand more than an hour. In making those limitations of time I had reference especially to those who by reason of their condition of health, period of life, previous experience or temperament were *particularly susceptible*. These are the cases in which we should exercise extreme caution.

As to country patients, Dr. Black could give Dr. Cormany a bit of history that would open his eyes, about a certain school teacher who was an invalid for years from just such prolonged operations as have been alluded to. Perhaps if Dr. Cormany should succeed in killing one or two, or ruining their health for life, he would take a different view of the question.

I was very glad that Dr. Black spoke so emphatically of the avoidance of frequent operations. In many cases his suggestion of one operation a week would be the one to carry out.

# EARLY DIAGNOSIS, AND IN BRIEF, THE TREATMENT OF TUMORS OF THE JAW.

By H. H. Schuhmann, M. D., D. D. S., Chicago.

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It was with great pleasure that I accepted the very flattering invitation of your worthy executive committee to write a paper on some surgical topic for the purpose of reminding the profession that our line of study and scientific pursuit includes something more than filling and extracting teeth. The subject which I selected is one in which I thought all would be interested, and one whose importance is easily appreciated. The difficulty of telling all I thought important enough to tell in the short time allowed for the reading of this paper, I did not realize until I got into the subject more deeply; I therefore at times will have to treat even important matters of interest very briefly, and beg for your indulgence.

The word tumor, as you are all aware, signifies swelling, and yet in referring to swellings usually characterized by tumors, we have in mind distinct localized growths. Let us for the moment forget the various classifications of tumors found in general surgical literature, inasmuch as we are at the present time particularly interested in the ultimate course and destiny of these growths, and consider them from a standpoint of their malignancy or innocence.

Occurring in the jaws, it is safe to say that any tumor which by local and general disturbance can endanger life is malignant. It is unfortunate for the student that the various surgical writers do not seem to agree on the malignancy of various tumors. Most text-books classify them into innocent, malignant and semimalignant tumors. In the first class, of course, they only include such as are capable of creating none but local disturbances, where there exists for some reason an excessive growth of tissues very like that of the affected part from which they spring; for instance, there may be a localized growth of bone or osseous tissue, an osteoma of cartilage, or chondromous tissue, a chondroma, of fibrous tissue, a fibroma. These tumors imitate exactly the type of tissue from

which they grow. They do not produce any serious changes in the surrounding tissues excepting by pressure and tension. They do not impress the system unfavorably any more than that they are generally annoying. By their location they may interfere with proper mastication and deglutition but beyond this are harmless. On the other hand, there are tumors which are not content by simply occupying part of the jaw, but which dig down and grow into the surrounding tissues; not satisfied in merely crowding the tissues before them, but saturate them with their poisonous elements, invading and destroying them, and through the blood disseminate their infection, setting up infectious tumors in the lungs, the liver and other parts of the body, until the patient finally succumbs to their exhausting influence.

As cases present themselves we find all grades of infectious tumors. Some grow very rapidly and without much loss of time lead to horrible ravages locally, and cause general infection; others slowly take years, still they all accomplish the same end, they all kill.

The term "semimalignant" tumor is misleading. A growth may present itself which does not cause rapid destruction or violently invades the surrounding structures, and still the step is in that direction. It means death ultimately, but slower death. In some text-books we find cancers or carcinomas classed as malignant and under the head of semimalignant we find the tumor called sarcoma. Sarcoma, as you all know, signifies flesh, but do not think for a moment that these tumors are made up of muscle tissue. They are constituted of exactly the same kind of cells though, which go to make up muscle tissue in the embryo, what we call embryonic connective tissue cells. Let us consider the sarcoma for a moment. We find there are three varieties. One is made up of round cells, another of oat-shaped, called spindle cells, and a third is composed of irregular, very large round cells, containing in their interior a minute nucleus, called giant cells.

Now, despite the fact that sarcoma is called semimalignant, the round celled is equally, if not more malignant than carcinoma, and even the spindle celled variety may exhibit most malignant attributes, the most innocent of the three being the giant celled. It is apparent, therefore, that in order to make the subject more clearly understood we should speak of tumors as being innocent or malignant, the degree of their malignancy being of secondary im-

portance. One important distinction between malignant and non-malignant tumors is made evident by the result of their treatment. Innocent growths once thoroughly removed do not return. This is not so with the malignant, from which microscopic cells have already forced entrance into surrounding tissues far beyond a point apparant to the naked eye and we will find them recurring even after the most generous removal.

It will not be possible in the brief time allowed here to enter into consideration of the peculiar features of each form of tumor, but I think it is sufficient to point out the distinguishing symptoms of innocent and malignant tumors, to study their cause and emphasize the need of early appreciation of their character and the necessity of early treatment.

Before entering the study any further it is advisable to call your attention to the fact that many of these tumors find their origin in the diseased condition of the gum secondarily invading the jaws, others to the contrary are located on or possibly in the body of the bone. Occurring in these different sites their ultimate course differs widely. Owing to the different relations of the two maxillæ to surrounding parts the greatest difference will make itself apparent in the malignancy of tumors originating in the upper or lower jaw. Let us first consider tumors in the light of their location. The gums may be subject to a general thickening called hypertrophy, and right here, you will find how deceiving some of these growths are. True hypertrophy springs from the periosteum of the alveolus proper, and while therefore but a simple enlargement may be visible the condition will yield permanently to nothing short of removal of the alveolus. This enlarged condition of the gum may occur as a limited hypertrophy due to pressure of poorly fitting artificial teeth. This is especially true in elderly people wearing such artificial dentures, for at their time of life the tissues respond quickly to any irritation.

Another instance of a tumor classified more justly as a gum tumor is found in innocent growths springing up between the teeth with very thin necks and bulbous ends. These polyps are readily removed by a wire loop or the cautery. This reminds me of some of the peculiarities in the growth of these polyps. I remember a lady whom I observed during three different pregnancies, each time there appeared a series of well-defined tumors between the teeth along the whole free border of the gums, bleeding freely on

the slightest irritation. These vascular tumors can be readily tied off or even removed by the finger nail. The hæmorrhage occasioned by the latter procedures is readily checked by the application of mild astringents. These are two forms of tumors in the gums, which on account of their simplicity and their frequent appearance, prompted me to name them first.

Let us now consider a class of tumors much more serious, although their name does not imply it. I refer to epulis. There are two kinds of epulide tumors; the one is firm, the other is soft. While the word epulis literally means a growth upon the gum, let me state right here that the name is a misnomer, inasmuch as you will find that tumors classified as epulide tumors are growths which, while they appear in the gum, have their original seat in deeper structures. The firm variety presents a dense structure, not however homogeneous throughout. They are firmly connected to the alveolar border, springing indeed from the very covering of the bone, the periosteum. This variety has not only bone as its base, but small independent collections of bone will on examination be found in its different parts. This tendency to organization into the bone is peculiar to sarcoma, and in fact is one of the essential characteristics of that kind of tumor formation. Soft epulis, is composed of very succulent giant cells which readily break down and ulcerate, assuming a very angry and malignant appearance, strongly suggesting carcinoma. It is impossible to outline the extent of invasion into the jaw occasioned by these tumors. They are at their very beginning so intimately associated with the bone that it is at no time possible to say absolutely that they are gum tumors, and this very fact marks their malignancy. It is this unrestricted growth that is typical of malignant tumors. We cannot define their outline, they present neither a well-defined neck or border, while they may occasionally strongly simulate innocent tumors by apparently exhibiting a slender pedicle, but the surgeon soon finds on removal down to the bone without including the periosteum, a recurrence of a new growth from the same site. Epulis may be excited into growth as a result of irritation from decayed teeth or retained root stumps. It is said that they are encountered in women more frequently than in men. Professor Heath seeks to find reason for this fact that women shrink from operative interference oftener and will bear pain, like a toothache, longer than men. Besides that, they are liable to conditions in life under which

operative interference is considered unwise, conditions to which men are not at all liable (I refer to the period of pregnancy and lactation).

Left to itself epulis may attain great size and produce considerable deformity. Despite the fact that epulis signifies growths upon the gum, please allow me to repeat that it is necessary to appreciate the fact that it is a growth implicating more than the soft tissues. Removal therefore, without including part of the bone means sure recurrence. For the purpose of removal I believe a strong Liston bone forceps and our surgical engine are the best instruments. The free hæmorrhage following is most effectually controlled by the Paquelin thermo-cautery. Operations calculated simply to gouge out or scrape out the affected surface are not sufficiently radical. Dealing with a tumor of malignant character it is always better to remove too much than not enough of the suspected tissue. A tumor bearing resemblance to epulis is often found on the hard palate, and likewise possesses malignant attributes, therefore should receive summary treatment. Statistics show that most epulide tumors are curable, and that they are likely to occur at all stages of life.

A more serious affection of the gums and one to which I wish to call your attention, as dentists more particularly, appears in a much more innocent garb, a mere ulcer. A sore appears, perhaps awakened by some carious tooth which does not heal kindly, exhibiting a tendency to extend, the borders become hard and thick and the base adheres to the bone beneath, this is cancer. Bone is never primarily the seat of carcinoma or cancer. This broad assertion was first made about thirty years ago. German pathologists at that time held up cancers on the upper jaw as examples, positively disproving such statement, but we now know that there are but two locations in the superior maxilla in which carcinoma is ever encountered. The first begins as above indicated on the gum, the second in that cavity known as the antrum of Highmore; as you know both the covering the gum and the lining of the antrum is made up of varieties of mucous membrane, and it is in this tissue that cancer begins to grow, not in bone itself, each case starting not as a distinct tumor, but as an ulcer eating its way into the bone. Upon the gum a sore forms, presenting thickened edges and by its firm immovable base, its infiltrating features, its tendency not to heal under treatment and possibly

pain already of this stage, show its malignancy. Dentists especially cannot have this too strongly impressed upon them, that when a recent ulceration of the gums shows no inclination to heal after judicious treatment of a week or ten days, it should receive prompt surgical attention. If neglected we must anticipate bone invasion. This invasion becomes further evident by the loosening of the teeth, and even at this juncture radical operation is quite certain to be successful. Of course, we must again cut wide of the diseased surface and be thorough in the extermination of the affection.

Just here it would perhaps be wise to consider for a moment carcinoma as it originates in the antrum. As previously remarked carcinoma of the jaw in its beginning is not manifested by swelling and its growth in the antrum more particularly illustrates this fact. Long before any swelling becomes apparent, the disease has not only undermined the maxilla but has spread in every possible direction. In persons of advanced years the first sign may perhaps appear in a violent toothache, a decayed tooth or stump is removed, and from the resulting cavity pus is found to discharge, the toothache remaining unrelieved. If the dentist will pass a probe up into the sinus of the antrum he may discover a softened mass of dead bone and should be particularly guarded not to mistake the condition as a case of necrosis as I have seen done. If the removed root be carefully examined a soft slight growth may be seen attached to it; still, if even at this time the growth is not yet recognized, you will soon find the same fungous tissue growing out of the socket from which the tooth had been removed, or perchance by this time fistulous openings may have appeared on the hard palate or in the nostril through which fetid pus is discharged. To illustrate the various ways by which carcinoma may first present itself, I wish to cite Professor Kuster, of Berlin, who calls attention to another train of symptoms which he had observed in this connection, which were a severe toothache and pain in the jaw, assuming the form of trigeminal neuralgia, in conjunction with which there had appeared persistent nose bleeding not accounted for by any existing nasal disease. He believes that the joint appearance of these symptoms though there be no external evidence of swelling, fully justifies the making of an exploratory incision down and into the bone, and he claims that he has never failed to find the antrum in these cases in a state of cancerous de-

generation. Professor Whitmarsch also reports a case where the appearace of a fungous mass in the nares accompanied by a profuse nasal discharge led to suspect cancerous degeneration, but in which case the true nature of the disease (carcinoma) was not made evident until revealed by a post-mortem examination.

You see by this that the various symptoms of cancer in the upper jaw concealed its true nature in the beginning, the growth progressing insidiously and except to the most watchful eye cannot be recognized until it has led to extensive destruction of the bone, not perhaps until it has opened into the cavity of the mouth, nose, or orbit, all within the last few weeks and already beyond cure. Professor Butlin removed within seven weeks after the first manifestations of the disease a carcinoma where he found not only the bone entirely destroyed, but sinuses burrowing into all the neighboring muscles. Under these circumstances it is evident that the most thorough removal of the upper jaw is totally inadequate to control the disease, if it is already advanced so that it can be recognized by external indications. Our only safety lies in the very early removal of the entire jaw before the disease has extended to any appreciable extent. To disclose the existence of a malignant disease which so cunningly conceals its presence, it is evidently necessary to examine not only the mouth but the nose, the orbit, and indeed, even the throat, when anything of the kind is even suspected, and will require the combined efforts of the dentist and surgeon. The dentist finds the suggestion of Professor Heath most valuable, that the attachment of any growth to the roots of extracted teeth should excite their suspicion of the presence of serious disease in the bone. Any such mass should be subjected to microscopical examination in order to determine its true character.

Innocent tumors of the jaw may best be divided into two varieties, the hollow and the solid. To the solid I have already referred several times, and I wish to say but a few words on those known as hollow or cysts. Dependent upon the site and manner of formation, cysts are known as simple, dentigerous and multilocular cysts.

Simple cysts connected with the ends of roots of fully developed teeth may be so small as not to awaken even suspicion of their existence. When they attain greater size they are recognized by their slow growth, their localized character, and particularly by

the gradual thinning of their covering, which at last becomes so attenuated that it crackles under slight pressure of the finger, and is painless. Dupuytren thought that the cysts are more frequently found in connection with upper canines than with any other teeth.

Dentigerous cysts are awakened by the irritation of an undeveloped tooth, when on account of misplacement, inversion, or some other reason, teeth do not attain their maturity. The first appearance of a localized expansion of the jaw exhibits no marked characteristics to distinguish it from a simple cyst, even from a solid tumor. It is found difficult to differentiate a dentigerous cyst until with time the walls grow thin and bend under pressure; possibly, until finally by the absorption of the entire bone covering. Of course, in all such respective cases search should be made for any absent teeth which had not been extracted; and the fact that supernumerary teeth may be responsible for these cysts should not be overlooked. To effect a cure a simple incision into the cyst wall and to evacuate the fluid contents will not be found sufficient, such an opening speedily closing again. In these cases it is necessary to remove part or possibly all of the anterior wall, cleanse out the cavity thoroughly, remove the irritating tooth or substance, whatever it may be, and allow the cavity to fill up by granulation.

A word yet in regard to multilocular cysts. They are not a direct result of dental irritation, but are due to an ingrowth of the epithelium covering the gum. However, indirectly it may be said that also they are caused by dental irritation, inasmuch as the ingrowth of epithelium is produced by the irritation from carious teeth. They are usually found in the lower jaw, and if left to run their course are apt to attain great size. As the name implies, they are composed of a collection of cysts, being separated from each other by thin bony walls. As landmarks in diagnosis the fluid contents, well-defined outline, slow growth and absence of pain are the ones most important to remember.

The solid outgrowth of bone and cartilaginous tumors are recognized by their slow growths and extreme hardness, freedom of pain and well-defined margins. Their removal simply requires exsection with a saw at the point of attachment to the bone. and no recurrence need be feared. A variety of cartilaginous tumors is known to grow from between the plates of the lower jaw, and this leads us once more for a moment to the consideration of

sarcoma, in order to throw more light on the difficulty of diagnosis. I will refer back to them for a moment, with your kind indulgence. Carcinoma, as already said, springs from a surface covered or lined with skin or its substitute epithelium. Sarcoma, though, originates in any connective tissue structure, and to this class belong bone, muscle, tendon, and in fact as far as the jaws are concerned, every part but the thin membrane covering the surface of the gum, and lining of the cavities in the upper jaw. It is evident, then, that sarcoma can spring from any part of the jaws proper. In fact, all malignant tumors originating in the jaws and not from the surface are sarcomata. Reference has already been made to the different varieties of this tumor formation, but I think a further short classification will aid in making things more plain. When in the lower jaw sarcoma is found arising from the periosteum or surface of the bone it is termed subperiosteal ; and when deep, from between the plates of the bone, it is known as central. I have already spoken of the one form, the superficial or subperiosteal sarcoma, which is the one interesting us mostly, usually termed epulis, and which when originating from the body of the superior maxilla, is a disease of most malignant type. It is a growth of more or less organized fiber, cartilage or bone ; one that usually involves the body of the bone, growing rapidly, attaining great size, spreading into the muscles, recurring speedily after removal, and if it has once begun to break down and ulcerate is soon followed by infectious tumors in other situations in the body, wherever the circulation may find a convenient place to deposit some of their infectious material, as is often seen in the lungs or liver. As to central sarcoma, the lower jaw is more frequently the seat of this variety than any other bone. The central sarcoma is less likely to infiltrate into the surrounding structures than the other, and may remain shut up between the plates of bone for considerable length of time ; this class bearing a striking resemblance to innocent central cartilaginous growths such as before mentioned. As a rule they are more innocent, or more likely to remain dormant than the subperiosteal variety.

If a growth springs up which is simply a multiplication of cells, being a counterpart of the tissue from which they grow, for example, in bone, cartilage or fibrous tissue cells of the same kind are reproduced as fully matured types of these tissues, we would have as results tumors which are truly osseous, cartilaginous, or

fibrous; but if instead, the cells do not mature, but remain in their embryonic state, this embryonic tissue growth is a sarcoma. There may be parts of this tumor which may mature so that at some points in it collections of true bone, cartilage or fibrous structures may be found. In some, the organization into fiber is so marked that the tumor may become quite hard; in others, the cells are mostly of the embryonic type, and the growth consequently remains soft. It is therefore apparent that under the term of sarcoma we find a group of tumors possessing the widest differences in histological make up. They may have nothing in common either in color, texture or consistence; in fact, they cannot be distinguished in this way from nonmalignant tumors. What marks their malignancy is their invasion into the surrounding structures.

Sarcoma is usually a disease of early life, and more frequently than any other tumor is the result of an injury, such as a blow, although carious teeth or any other irritation may be its cause.

It is evident from what has been said that the boundary lines between the various connective tissue tumors (sarcomata) cannot be drawn with anything like precision. There may be a single tumor in all stages of development of tissue at one and the same time. In others, there may be in evidence immature cells in an otherwise fully matured growth. With this condition existing, it becomes clear why I have hesitated to distinguish between these tumors; but in a general way it may be said that rapidity of growth, softness of texture, invasion into surrounding structures, tendency to break down and ulcerate, great pain, and often very disagreeable odors, all lead to infer that we are dealing with a malignant disease; not to forget that all tumors with periosteum or bone as their base should be looked upon with suspicion, and generally removed.

There is a time in the history of each of these tumors when they are but a local disease, and when perfect removal can be accomplished. To this, of course, early recognition and speedy treatment are most essential. In the removal of these tumors the danger of their infecting tissues far beyond the recognition by the naked eye must not be lost sight of, and to effect a cure a most thorough removal and radical work is the problem before us. "Early and thorough removal" is the motto. While the question which method is the one least liable to lead to disfigura-

tion is an important one, the one how we can reach every diseased point still remains the most important. If at all possible we should always cut wide of the disease, and in almost all cases this can be done when the operation is undertaken early. In some cases it may not be necessary to make external incision ; however, each case becomes a law in itself, and the diagnosis and prognosis are the governing rules in the mode and manner of operation.

Let me add that it is remarkable that even the most generous removal of either upper or lower jaw creates so little disfigurement in comparison with what one would expect from such an operation. Every one who has seen these cases becomes impressed with this fact.

I am aware that the study of these tumors is beset with a great many difficulties, and that an exposé of them in language intelligible but not too technical is even a still greater task. I have tried to make myself clear, yet if I have not I can only feel that this again illustrates the necessity of more frequent discussion and study of such topics as this.

### DISCUSSION.

Dr. C. P. Pruyn : After having listened to such an exhaustive treatise on tumors of the mouth and jaws, and the nature of early diagnosis, it is almost unnecessary that anything further should be said ; indeed, there is not much more that can be said. Fortunately, or unfortunately, these tumors present themselves to the dentist comparatively seldom, so that there are many men practicing who have had very little experience in seeing and examining tumors of the mouth, while there are others who have had quite an extensive experience, and we all agree, I think, that an early diagnosis and prompt treatment, are imperatively required.

Most tumors that present to the average dentist are of the epulic character, which are so readily removed and treated. The operation for their removal is so simple that very little need to be said in regard to it. In the removal of these small growths with the finger nail, as has been suggested by the author of the paper, I think it could be better done by instruments, particularly with the cautery, which removes them very easily, and at the same time prevents hæmorrhage. The farther we become advanced in surgical knowledge, the more we will see of these growths without any doubt, and we should be sufficiently conversant with them to make

an early diagnosis, whether we operate or not. The importance of an early diagnosis is apparent to all of us. For some reason the dental profession, as a profession, hesitate considerably with reference to performing surgical operations about the mouth and jaws. I do not think this should be so, for with our present methods of instruction and dispensary and hospital experience, we should be sufficiently conversant with these tumors in order to make an early diagnosis, and promptly treat them. I think it falls especially within our province as dentists to have this part of surgery under our own domain to a considerable extent, and the chief reason why we have so little to do, is because we do not give this part of dentistry the attention we should. We become too much dental artisans, giving too much attention to the filling of teeth rather than to the surgical part, which is our work to do.

Dr. C. R. Taylor: I have had some experience in the removal of tumors of the mouth, and had I known the subject would have covered such a wide field as has been done, I should have been very glad to have brought along with me two or three casts of mouths, before and after the removal of tumors. One in particular—the case of a lady who had suffered several years from a tumor extending from the second bicuspid on the right to the second bicuspid on the left of the lower jaw. All the teeth in place. The method of removal of this tumor was by injecting it with a 95 per cent solution of carbolic acid, and the result was as complete and perfect as could possibly be obtained. It was a surprise to myself, I assure you. This tumor was removed in such a way that no signs were left of there ever having been anything of the kind.

I also resorted to the same treatment to remove an epulis, which had attached itself between a cuspid and a bicuspid tooth on the right superior maxilla, with complete success; but in that case I overreached myself a little by the method of injecting, and as a consequence destroyed a little more bone than I thought was necessary to accomplish the result. Septum between two teeth was removed by the death of the bone.

I have also had a few surgical removals of fibroids in the lower jaw, and just a short time ago I detached a very small papilloma from the soft palate. These were both done surgically. In twenty-three years' practice I have only seen two cases of cancer. One

that came to me in the past year; a man eighty-five years of age; died in the hospital a few months afterward. In this case the cancer extended from the ramus to the cuspid tooth on the lower jaw. The second case was a man sixty-five years of age, who had a tumor in the antrum of Highmore. Fortunately cancers occur usually in very elderly people, whose span of life is nearly finished.

Dr. T. W. Brophy: I regret that I was not here at the beginning of the reading of the paper. I presume, however, that Dr. Schuhmann gave good reason for his classification of tumors. He said something, however, after I came in, in regard to the naming of tumors to which I would take exception, that is to say, I would scarcely agree with him in calling a cyst a tumor, and yet under the name of tumor we must express everything in the way of an enlargement, for the word tumor is derived from the Latin *teumeo*, signifying an enlargement. Anything that is an enlargement must necessarily be classed in the strictest acceptance of the term as a tumor. A cyst is not a tumor, because a tumor is necessarily a growth of tissue. According to the definition of the late William H. Van Buren, of New York, we have a striking analysis of what a tumor really is. Dr. Van Buren says that a tumor "is a local limited enlargement taking place in any part of the body and consisting in its substance of a new outgrowth of tissue, which has no physiological purpose." A cyst necessarily should not be included as a tumor according to this definition. An aneurism, while it presents an enlargement of the part, would not necessarily be a tumor. So, then, a tumor I would take to be a growth of tissue such as we find in the simplest form as a wart. A wart is a tumor, a growth of the tissue, either of bone or any other tissue.

The field is too large to discuss in all its different bearings. We will take the form of tumor which presents itself most frequently to the dentist, which comes as a result of irritation. I refer to the epulic form of tumor, caused not infrequently by injudicious management of the teeth by the dentist, such as extreme force employed by quick wedging, setting up irritation of the pericementum and periosteum surrounding the alveolar processes, etc.

I differ with my friend Dr. Pruyn in the frequency of these conditions. I have seen a great many of them in the last few years. An irritation is established by deposits of salivary calculus and attempts are made to remove the calculus by instruments as in the treatment of pyorrhœa alveolaris. Of course, I agree that

tumors are the outgrowth of the periosteum, and anything that will establish and keep up irritation of the periosteum is capable of causing an epulic tumor, or a growth from the periosteum. The application of a rubber dam, the ligating of it down close to the alveolar borders may be the cause of epulic growth. These growths are of the most common occurrence, and come more frequently under the observation of the dentist than any other class of oral tumors. They may be benign or malignant. There may be conditions which simulate those growths. The dentist may be misled in making his diagnosis. Conditions such as this may arise and threaten to become very serious, and yet under almost any kind of treatment, such as a little pressure carefully applied, and the use of astringent applications, they may disappear and never recur.

The time in life, especially in women, when these tumors appear so often is during the period of gestation, at which time all diseases are more prone to take on development, while at other times they would not be so apt to create such a marked disturbance. Under such circumstances surgical interference would be contra-indicated. We should resort to the application of mild astringents. My friend Dr. I. N. Danforth, of Chicago, a gentleman who holds a high place as a pathologist, and who has had considerable experience in the treatment of growths, both malignant and benign, in this special field of surgery suggests the use of tannic acid and glycerine in the proportion of 10 grains to the ounce. It is a simple remedy, and I have seen many of these false tumors or growths simulating epulic tumor, disappear under this mild treatment within a few weeks' time.

I suppose the term pseudo-epulic might be especially applicable to these conditions. We see the gums enlarged; they become puffy; they bleed readily on the slightest friction or irritation, and under the stimulating astringent action of tannic acid and glycerine they will contract and fully disappear. When the period of gestation is complete they are not liable to recur. I mention this because it is a matter of great importance, and anything in the way of surgical interference at that time is not indicated, and with palliative treatment, with careful management without caustics, and without the use of the knife, we can oftentimes arrest the further development of these growths, and indeed, completely overcome and remove them by employing the method that I have outlined. Should I find a case of true epulic tumor, which comes from the perios-

teum extending up apparently between the teeth and seeming to separate them widely, as they sometimes do, then I think it is well to resort to the vigorous methods suggested by the author of the paper. The only criticism I have on the paper is, that it entered into a very broad field, and that it would have been much better if it had been limited to the consideration of fewer growths and not discussed the subject of tumors in general. In clinical experience I find these growths often recur, and if we succeed in preventing their recurrence we need sometimes to go very much further than to extirpate the growth itself, to the periosteum, from which it emanates.

In this connection I would say that in some cases where I have removed these growths I have removed parts of the periosteum and alveolar process, together with one or two teeth, going far enough beyond the region of the disease to completely extirpate every part of it. In one case I found that I had not gone far enough, and the growth recurred, requiring another operation. I have found it best to go far enough so as to be absolutely sure that I have removed all of the tissue which is involved by the morbid growth.

As to the management of the condition, it simply requires antiseptic cleanliness until nature can effect the process of repair. If we have a sarcoma, it requires too much time to go into an explanation of the different methods to be employed in treating such cases. I would say, however, that nothing short of thorough operation and going beyond the region of the disease, is liable to effect a cure. The author of the paper referred to epithelioma, and he has truly said that these diseases usually at the beginning are benign. They are susceptible to a perfect cure if taken in time. How frequently do we find a person suffering from an initial lesion of epithelioma who is likely to neglect his case until by and by the glands become involved and he is beyond all human aid. If these cases of epithelioma are treated in the beginning, a perfect cure can be effected ; but let the disease go on and be neglected, as was the case with the late Gen. Grant—whose death was the result of epithelioma caused by a jagged broken molar tooth which he permitted to lacerate his tongue for a long period of time, together with the irritation which was kept up by the continuous use of tobacco—the disease by and by involves the glands of the neck with fatal termination. Hundreds of people,

through carelessness or negligence, might be relieved of this condition if treated at the inception of the disease; but they permit it to advance until the condition is beyond the aid of the surgeon. If we have a cyst for treatment we have a condition very different. It is simply an accumulation of fluid. This fluid may be serous or gelatinous; it may be sebaceous fluid.

One word in regard to dentigerous cysts. I wish to say that these should be opened and their contents removed. Generally, the contents of a dentigerous cyst are such it will continue to secrete fluid so long as it is permitted to remain, and our only hope of effecting a cure in such a case is to remove the membrane; and this can best be done by surgical procedure, yet by the use of escharotics we can destroy it.

With reference to escharotics I would say that I employ them sometimes, but I do not like to do so. I prefer to make a clean operation, remove the membrane, and then by taking care of the parts, keeping the orifice of the wound open and clean, thus assist nature in bringing about granulations to heal the wound.

I want to say a word or two about carbolic acid as an escharotic. My friend Dr. Taylor says he uses carbolic acid as a means of curing an epulic growth. I would like to sound a word of warning about the use of escharotics in the way of injections. I am afraid that if the dental profession resort to this method generally, they will have patients some day go into collapse. They will find them in such a state of depression, and possibly collapse, which it will be a difficult matter to overcome. The time, I think, is passed when we can take chances of this kind, particularly when other means, which I regard as much better, may be employed.

The loss of bone in the case mentioned is only a single instance, and I fear that if this agent were generally employed we would have many unhappy results. I have in mind at the present time a case in which one-half of the lower jaw was lost by the injection of carbolic acid into it. The injection was carried through the apical foramen into the membranes over a sufficient surface to establish an inflammation which resulted in death of one-half of the lower jaw. For that reason I would discourage the use of powerful escharotics in the treatment of these growths.

Dr. C. J. Tibbets: Unfortunately I did not arrive in time to hear the early part of the paper, but upon making inquiry of Dr.

Taylor I learn that nothing was said about the etiology of these tumors. Dr. Taylor informs me that it was not alluded to. To arrive at a proper consideration of the subject, it is necessary to divide it into three divisions, namely, the etiology, pathology and treatment. There are two distinct theories of the etiology of these diseases, namely, the biological and the bacteriological. The early pathologists consider the disease of a truly embryonic character; basing their theory upon the wandering cell, or embryonic origin of these tumors. Such instances are evinced in the development of teeth and ciliary growths in various remote organs of the body which is used in support of that theory. Later scientists based their theory upon a bacteriological foundation, setting forth their claim that by inoculation their claim is proven to some extent; for instance, in the treatment of the early manifestation of the disease by inoculations of erysipelas and various other bacteriological infections, they claim to have produced recovery by this means. As to the treatment of these tumors, I would advise against too early resort to surgical measure. I would wait until the case is clearly developed before operating; for two reasons, first, that the oft-times serious consequences of the operation may be avoided; second, for the absolute assurance of the patient as well as the surgeon. In many instances, no doubt, the patient is hastened into an operation through false alarm to suffer lifelong forebodings, of a probable recurrence of a supposed malignant affection, and this suffering in many instances is quite as serious in its consequences as the supposed malignant disease. I have known of instances where surgical operations have been performed in which I am certain the disease was not of a malignant character. One instance in my own practice. The nonintervention of surgery resulted in relief of the patient by palliative treatment when surgical intervention was urgently advised and insisted upon by another surgeon, but recovery resulted without the operation so advised. I would recommend the proper use of escharotics; when properly used the danger is very slight, for instance in the application of nitric acid. The action of it may be limited by using it upon a pine stick, which absorbs the acid and imparts it in sufficient limitation, as to insure definite application when placed in contact with the tumor. One very noticeable case of the beneficial results of this treatment and the ultimate recovery of the patient was where one of our surgeons treated a case of malignant growth of the os uteri with a pine stick

saturated with nitric acid. Surgical treatment was regarded impractical owing to the extent of the disease, yet the patient insisted upon something being done to prolong her life, and in compliance to her appeals he resorted to this method of treatment with really no hope of her permanent recovery; but much to his surprise and the patient's satisfaction, it resulted in permanent recovery. As to the frequency of these tumors we are enabled to recognize them before the general practitioner, but I very much question the advisability of resorting to surgical interference before holding consultation with other surgeons. I think this is advisable in all instances, for the protection of our own reputations and the safety and welfare of the patient. I have known so many instances of unnecessary, unjustifiable and irresponsible surgery done by surgeons of renown as well as the mediocre, that it has impressed me with a realization of the serious responsibility of the one who wields the knife.

Dr. Thomas L. Gilmer: I was somewhat disappointed with the paper. I wanted to learn something about the early diagnosis of tumors. The essayist did not give us anything new on that phase of the subject, if he did, I did not hear it. It is not only the privilege but the duty of the dentist to treat these diseases of the mouth. I think as to manipulations in the mouth, we should be able to do most of them better than the general surgeon. The removal of many of these tumors is attended with no more difficulty and requires no more skill than most of the operations that dentists usually perform. I believe that a considerable amount of the periosteum and the bone immediately underlying these so-called epulic tumors should be removed, otherwise we are liable to have a recurrence of them.

There is a class of tumors for which dentists are to a certain extent chargeable. It is a growth caused by poorly fitting artificial dentures. The teeth are extracted and a temporary set placed in the mouth for a few days after their removal, and the plate seems so satisfactory to the patient that it is worn for years. During this time a great deal of shrinkage has taken place and as a consequence we have quite a space between the buccal side of the plate and the buccal surface of the process, allowing the soft tissue from the cheek to grow in between, forming a considerable growth. It is not unreasonable to suppose that this growth, under constant irritation, may become in some cases malignant in character. It

is not always necessary that this excess of tissue should be removed by instruments. However, in some instances this may be entirely proper, but if the tumor has not grown to a great extent and has not become inflamed, is not breaking down, the simple application of a properly fitting denture may be all that is necessary to effect a cure.

There is another form of tumor of the mouth that dentists should be a little careful about. The reason I speak of this now is because I know of a case that was operated upon not long ago by a dentist, and he had a great deal of trouble to undo the mischief he caused. It was not strictly speaking a tumor, but an aneurism. However, it was mistaken for an alveolar abscess, and a large opening was made into it which resulted rather unsatisfactorily, as a profuse arterial hæmorrhage followed. It is safer in such cases to introduce an aspirator or hypodermic syringe and find out the nature of the contents before lancing, unless its nature is readily determined by pulsation or otherwise.

Dr. Newkirk: May I ask Dr. Brophy one question? Did you say, doctor, that there is no such thing as a cystic tumor?

Dr. Brophy: I said a cyst was not a tumor. I maintain that. I stand by that statement, according to the understanding that we have at the present time, as to what really constitutes a tumor. A cyst is not a tumor. It is possible to have a cyst in connection with a tumor, and it may be that Dr. Newkirk wishes to have me state whether it would be possible to have such a combination. Such a condition may exist. A cyst and a tumor may exist at the same time.

Dr. Schuhmann (closing the discussion): I regret the lack of participation in the discussion, only shows that the subject ought to be brought before dental societies more frequently than it has been, so that the members may become more familiar with it. It seems a pity that we should spend four or six years in our colleges, and much of that time in studying anatomy, physiology, chemistry and pathology, and then when we launch out into practice confine ourselves to treating diseased teeth and forgetting almost entirely the wide boundaries of our field.

As to the early diagnostic features of malignant tumors, I would say that any tumor which grows rapidly, which does not present a well-defined outline and produces pain, should be looked upon with suspicion, and I do not think that surgical inter-

ference in such a case should be delayed, but to the contrary that the tumor should be operated upon promptly. It is better in my opinion always to cut a little wide of the line of demarkation of a tumor ; in other words, I think it best to be safer to cut *too wide*, than *not wide enough*.

The object of the paper was not to describe each individual tumor, nor to describe the treatment of each, but to point out the differential points and if possible to classify them in a few groups to simplify the study thereof for those who care to pursue it, it would be impossible to give a satisfactory history of each variety in the short time allowed here. By noting the different divisions of growths, the manner and seat of origin, the whole picture which to most of us may have at first appeared much befogged, becomes cleared up and is easy to master by a few hours' further study, at least sufficiently to give us such a clear and lasting impression of the study of tumors that minutia simply become interesting reading matter rather than bemuddling words. I thank you for the kind reception of the paper.

# CERVICAL FILLINGS AND CLAMPS.

By J. Austin Dunn, D. D. S., Chicago.

Doubtless all will agree that the preparation and filling of cervical cavities or cavities beginning at the gingival line and extending rootward are difficult and to be dreaded principally because of the lack of satisfactory means with which to expose the cavity and hold the rubber dam securely in place so as to be able to manipulate with freedom and ease. The many failures of cervical fillings are no doubt due to this fact. This will probably explain the reason why we are all so much interested in anything new pertaining to cervical clamps, and so I judge you will be more interested in the clamp I am to present than anything which might be said touching the preparation and filling of this class of cavities.

For more than three years I have spent not a little time and money in the effort to construct a clamp that would more nearly meet the requirements for cervical cavities, and my efforts during most of this time have been rewarded with productions no better than those in use. I must confess that I was somewhat discouraged but through the encouragement and suggestion of friends, and especially Dr. George H. Cushing, I have succeeded in producing results which so far have proved very satisfactory. The object which I had in view was to construct a clamp which would embrace the following essentials: First, a clamp simple in mechanical construction; second, one that could be easily and quickly adjusted; third, one that would not unnecessarily crush the soft tissues; fourth, one that would give the least pain to the patient; fifth, a clamp that would be stable and would not move out of place; sixth, one that would be less in the way of the opposing teeth; seventh, a clamp that would accommodate itself to any angle or irregularity of the teeth or tooth surface.

The clamp which I present to you to-day consists of an outer or labial jaw and an inner or lingual jaw. (Two parts.) The labial jaw consists of a loop or bow adapted to encircle the cavity, so that free access may be had thereto, and is provided with a projecting part or arm adjusted to engage the lingual jaw. The lingual

jaw is doubled upon itself so as to produce a loop, the rear end being bent downward so that when in position it is substantially parallel with the labial jaw. The projecting end of the labial jaw passes loosely through an opening in the loop joining the two jaws together, and is provided with a screw threaded opening through which passes a screw adapted to engage the projection on the lingual jaw.

Fig. 1. The lingual jaw is bent at such an angle as to form an important part of the clamp. It has a peculiar curve and is so arranged with relation to the labial jaw and the shape of the teeth that when placed upon a tooth it naturally takes a triple bearing ( *i h f* ), which is necessary to the stability of any clamp, and therefore provides against the usual rocking or slipping out of

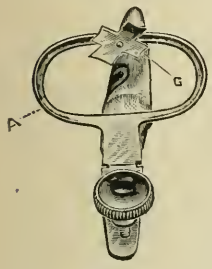


FIG. 2.

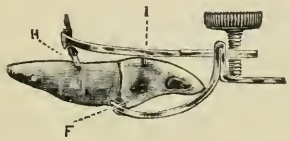


FIG. 1.

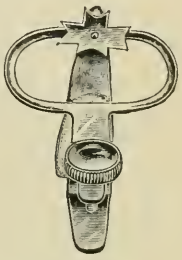

FIG. 3.

place when in position. The rear end of the lingual jaw is curved downward and then upward over the incisive edge of the tooth, so that the slot through which the end of the labial jaw passes is very nearly on a line with the labial surface of the tooth, which allows the labial jaw to slide upward and downward and on a line parallel with the long axis of the tooth. The contact points on the labial and lingual sides of the tooth ( *i* and *f* ) are nearly always on a line opposite each other and tend to hold the two jaws together and clamp in place, so that the pivoted beak (*h*) is practically independent in its movements.

It will be seen that the rear end of the curve of the lingual jaw, as just described, containing the controlling device is out of the way of the opposing teeth so that the mouth can be sufficiently closed to be at rest, besides the tendency of the opposing teeth to strike the end of the clamp and force it out of position, giving more or less constant pain to the patient, and annoyance to the operator is very much modified if not largely overcome. The end of

the jaw that engages the lingual side of the tooth is concaved on its inner side (Fig. 1 *f*), so as to conform with the linguo-gingival ridge of the tooth. When the end of the jaw or beak is constructed in this manner it conforms to the shape of the tooth and when in position will not tend to draw or pull the clamp out of place when the thumbscrew is tightened. This construction also allows the clamp to be placed in different positions on the tooth, as the beak will fit the linguo-gingival ridge even when necessary to move and set the clamp at an angle from the straight line in order to accommodate adjustment to irregularities of the teeth. The contact end of the lingual jaw (Fig. 1, *f*) instead of being bent at right angles, as is frequently the case, is given a gentle curve, as shown, which allows it to slip under the gum without giving the patient unnecessary pain.

The unique feature in this clamp consists in the fact that the labial jaw is provided with an adjustable beak with eight bearing surfaces, of unequal sizes, consisting of a long narrow beak, a long wide beak, a short wide beak and a short narrow beak, each a circle contact, and four surfaces describing a quadrant circle to be used especially at the mesial or distal angles on the root surface (Fig. 2 *g*), so as to conform to any size tooth surface or angle. The beak is pivoted to the jaw so that any of these bearing surfaces may be used when desired.

Since the beak is pivoted to the jaw it moves with relation thereto, and hence when in engagement with the tooth will conform to the shape of the tooth and allow a firm grip of the tooth without throwing the clamp out of position, which is the natural consequence or tendency when the beak is rigid with the jaw. In attaching the clamp to the tooth it is slipped to position over the tooth and by a turn of the thumbscrew the beaks are made to touch lightly, then with the index finger of the left hand on the pivoted star beak the labial jaw is pulled into place and tightened. It will be seen that by moving the labial jaw it may be made to accommodate any desired apical length or reach. The adjustable pivoted beak when in position always rests upon two outer points as indicated (Figs. 2–3), hence always accommodates itself to any irregularity of the teeth or tooth surface, thus allowing the clamp to be used on the side of the tooth as well as the center. This beak always firmly engages the tooth, whatever the shape of the surface, and hence when the set screw is tightened the clamp is fixed and steady and there is very little tendency at least for

it to move to a different position. This result cannot be obtained when the beak is rigid with the jaw.

The lingual jaw of the clamp just described is set to the length of the longest tooth, the beak is concave, the ridge is convex and it is not easily dislodged. The least pressure will hold it in place no matter how far the labial beak may be pushed upward; therefore, this disproves the necessity of an adjustable lingual jaw. In other words, there is an absence of any tendency of the lingual beak to push beyond the linguo-gingival ridge at this point. Doubtless this will be appreciated because of the fact that most of the pain caused by cervical clamps is due to the impinging and crushing of the soft tissues on the lingual side.

DISCUSSION.

Dr. GEO. H. CUSHING: *Mr. President:* I was asked to open the discussion on the subject of cervical cavities and their treatment; but this is merely the description of a clamp. I hardly know what to say except to remark that the clamp is a good one. I have not had an opportunity to test its application to the teeth. It seems to me to be the most efficient and best adapted clamp for the class of cases under consideration that I have ever seen. The description of it you have heard, and the clamp is here on exhibition. Of course, we all recognize the importance and absolute necessity of a clamp of some kind which will enable us to fill these cavities with success, and I think this will do so with less pain and inconvenience to the patient than any other with which I am familiar.

Dr. DUNN: I do not know that there is anything I can add to what has already been stated in my paper but replying to Dr. Cushing I will say that he is correct in saying that nothing was said with reference to the treatment of cervical cavities. For the reason that the question has been considered with reference to a suitable clamp, which means the transforming of a very difficult and troublesome operation into a simple one, so that comparatively speaking there is very little of importance to discuss.

In closing I wish to say that I make no claim as to an ideal clamp, but I do believe that the lines of construction and the principles involved in this clamp are in the direction of the ideal, and if it *marks only a step* in advance as a means to making better cervical fillings, the conservation of the soft tissues, greater comfort to ourselves and less pain to our patients and suffering humanity, I shall be satisfied.

# TO WHAT EXTENT IS THE WASHING OF AMALGAM MASSES AN IMPORTANT FEATURE IN THE PRODUCTION OF A GOOD FILLING?

By Dr. T. W. Prichett, White Hall, Ill.

This proposition emanates from the American Dental Association to the different dental societies, with the request that they give it consideration and make a report of their conclusions.

In the light of recent revelations made by Dr. Black, it would seem to be a needless task to discuss the proposition at all. He quite clearly demonstrates that the implied meaning of the question has no basis of support—is supererogatory—obsolete. I quote his vigorous Anglo-Saxon on this point: "Washing processes with the view of restoring the alloy by removal of the oxide have as yet been but partially tried. The usual methods of washing with ether or alcohol proved to be of no value, though apparently much oxide was removed." If we accept Dr. Black's determinations as conclusive, that the best results only can be obtained by the use of perfectly clean alloys, as well as of their approximate proportions, then we have removed from our way a great obstacle to the securing of more constant results in their use.

Anything that will materially increase the efficiency of the alloys will be hailed with delight by a large number of the profession. That Dr. Black has pointed the way to methods that if well followed out make possible a very great improvement in the results of amalgam fillings, I do not in the least doubt. I like to say this of him in his presence—not waiting until his obituary shall be written saying of him, "he was a good man."

Since it has been demonstrated that freshly cut or strictly nonoxidized alloy makes the most stable and desirable amalgam filling, the wonder is that some one had not made so simple a discovery long ago. Heretofore two ideas seem to have been in the minds of many of the profession in regard to the effect of washing, or an attempt in some way to remove the oxidation.

Some would wash with the view that the mass when freed

from oxide, would measurably prevent discoloration of the filling and of the tooth also. Others would wash with the expectation that the stability of *form* of the filling would be the better for so doing.

I will now put in evidence late testimony of one of our most experienced and methodical operators: "I have kept the records," he says, "as to washing of amalgams, but so far have had nothing to indicate definite results."

"Perhaps if the different cases were followed up closely something might be developed. As I see them afterward, the washed looks no different from the unwashed amalgam."

"Theoretically, it should be the proper thing to wash the alloy fillings—the purer the metals the better the amalgamation (one would think) and the better the resultant plug."

"Practically, in the mouth I see no difference that can be with certainty attributed to the washing or nonwashing of the alloy."

"I have tried all the standard methods—have used acidulated water—also at one time experimented with a solution of nitrate of mercury (which some one suggested would render amalgamation more perfect) with no results, so far as my observation went, which of course was very likely not as close as it should have been."

"It simply shows, however, that so far as my experiments and practice went, the results were not striking enough to enable me to see any difference."

The conclusions of our friend are about the same, I imagine, as most of us entertain upon this subject.

The gist of the proposition is—"the production of a *good* filling." Then is not the question pertinent—what *is* essential to the to the production of a *good alloy filling?*

Out from among us I hope to hear a familiar voice declare that it is largely a matter of the "personal equation" that contains the elements that makes the answer in its most definite, complete and comprehensible expression.

Note by Dr. Black.—By arrangement made by the Executive Committee with Dr. Black and a number of the members of the society a number of experimental amalgam fillings were made in steel tubes on the afternoon of the first day. Measurements of shrinkage and expansion of these fillings were made by the use of the amalgam micrometer by Dr. Black, and by the microscope by

Dr. F. B. Noyes, and the shrinkage and expansion reported in detail on the third day. These tubes with the amalgam fillings, together with the instruments and plans of measurement, were exhibited at the clinics on the second and third day.

The results of these experiments strongly exhibited the fact that many of the alloys being depended upon for filling teeth by members of this society are at the time of their use in such condition that they will shrink badly; and further, that up to the present time no available means have been developed by which the dentist may safely know of the good or bad condition of the alloy he may choose for use.

It is believed that the publication at this time of the results attained in detail would do injustice to some good alloys, specimens of which were shown by the experimental work to be in bad condition, without being able to point out, in the present state of knowledge of the subject, a safe and efficient remedy.

The general subject and the particular experimental fillings were freely discussed by the membership, and the progress made in the study of the nature and causes of the deterioration of cut alloys noted.

# CATAPHORESIS.

By W. W. Moorehead, D. D. S., Aledo, Ill.

From the beginning of the history of dentistry to the present day much time and labor has been spent by our profession in endeavoring to relieve our patients from the pain and suffering brought on by the practice of dentistry.

A majority of the people as a rule look upon our offices with a greater or less degree of horror, and few indeed are the patients who do not dread to make an appointment with their dentist. To have our patients know that it is possible to relieve them from the pain and suffering of operations on their teeth would be to have them come to us for appointments with their minds relieved from that fear of being hurt, which I might say has ever been the curse of our profession. And it would also relieve the operator's mind when he is about to fill an appointment with a nervous patient whose teeth are in a hypersensitive condition.

Time and again have we tried to benumb the sensitiveness of the dentine by the use of caustics and desiccants, and some have even resorted to the use of general anæsthetics, but we all know too well the result of these applications. At times we have been successful in treating sensitive dentine, but in a majority of cases we have found that a sharp instrument in the hands of a skilful operator was the best, and most reliable obtundent.

The result of these failures has caused the profession to become skeptical about any new method that you may allude to for benumbing the dentine.

To have within our power a method by which we can control the sensibility of dentine, and to be able to manage some of those uncontrollable cases, is an object that has been sought for by all progressive dentists.

By the use of cataphoresis I think we have a method by which we can control and obtund the most sensitive dentine.

Several of our dental journals have recently contained articles on the subject just referred to, with your permission I shall quote from them: The definition of cataphoresis as given by Dr. Wm.

J. Morton is this: The movement of fluids together with the substances they hold in solution from the positive pole of the electrode conveying a continuous current in tissue toward the negative pole.

It is the flow of fluids from the positive to the negative pole. He also states that the effects of a medicine placed at the positive pole extends only half way. Thus if you place the positive electrode containing cocaine on one side of the gum, and the negative electrode on the opposite side, the effect of the cocaine will extend only half way; the opposite side will be hypersensitive rather than anæsthetized.

In a recently published edition of Bigelow's International System of Electro-Therapeutics we find an article by Dr. Frederick Peterson claiming that cataphoresis is purely a physical process.

Thus he says: Physically, and not physiologically, it is almost certain that electrical endosmosis is a mechanical and not an electrolytic effect, for two reasons: first, the action will show itself in any single solution whenever a porous partition, such as plaster of Paris, stoneware, etc., is inserted in the path of the current, even when no electrolysis is taking place, that is, no decomposition; and secondly, because the phenomena may be stated as follows: Whenever a capillary tube containing a liquid sustains a difference of potential between its extremities, liquid is transferred through the tube toward the cathode. The following facts will explain the character of the process in a clearer and more popular form. If two compartments separated by a membrane are filled with a fluid, and in each an electrode is placed, there is a streaming of the fluid through the septum in the direction of the galvanic current, that is from the positive to the negative pole, so that in the course of time there is an increase of fluid in the negative compartment.

Naturally this osmosis, as is well known, occurs between two dissimilar fluids, the direction of the osmotic current being from the lighter to the denser liquid. But if the anode is placed in the denser liquid, and the cathode in the lighter, this natural osmotic current is not only overcome, but reversed.

This streaming movement is analogous to that taking place in the semisolid sarcous substance of muscle when subjected to the constant current, and observed under the microscope, a visible flowing of the contents of the muscular fiber from the positive to the negative pole.

Some may think that the cataphoric action of electricity is a new thing, but such is not the case. The idea of introducing medicines into the system by the action of the galvanic current originated long ago.

Richardson employed it to introduce medicine into the gums for the purpose of extracting teeth in 1859. Beard and Rockwell in their work on medical and surgical electricity refer to several gentlemen who claim to have carried medicines into the system by the use of electricity.

Owing to the extreme sensitiveness of the dentine, an apparatus that can be used at other points cannot be used on living teeth. To use cataphoresis on living sensitive teeth it is absolutely necessary that you have an instrument by which you can at all times have perfect control of the current. We must be able to raise this element from a weak to a strong current by such minute gradations, that it will be almost imperceptible to the patient.

Such an instrument or rheostat is now manufactured by the Electro-Therapeutic Company, known as the Wheeler fractional volt selector. With this selector you may use a battery of about thirty cells, or the Edison 110 volt street current.

After connecting the selector with the battery, or street current, place a strip of blotting paper which has been saturated with a solution of iodide of potassium on the binding posts on the top of the selector, and the positive pole will give a reddish spot. To this pole attach the platinum pointed or positive electrode, to the other pole attach the negative, or sponge electrode.

The connections having been properly made you are ready to use medicine by the process of cataphoresis.

Always adjust the rubber dam, insulate any metal fillings that may be close to the cavity you wish to operate upon, this may be done by coating them with temporary stopping, or chloropercha, cut away the walls of the tooth just enough to gain access to the cavity ; in which you may now place a pellet of cotton saturated with the obtunding solution you prefer to use ; give the patient the negative, or sponge electrode saturated with a weak solution of salt water, and instruct him to hold it in the palm of the hand or on the face, apply the positive or platinum pointed electrode to the cotton in the cavity, and sometimes it is necessary to moisten this during the application of the current.

Begin with a current that is at first imperceptible to the pa-

tient, turn on the dial on top of the selector slowly, and at some point between four and eight volts the patient will experience a slight pain, at this point allow the current to run a few minutes and then raise it slowly to the number of volts that may be required to produce the desired anæsthesia. Owing to the difference in the resistance that people of different temperaments offer to the electric current, it is impossible to designate the number of volts that may be required for each case. It is not necessary to use a strong current in cases of exposure of the pulp, or in young patients.

But by prolonging the application, and using a high degree of voltage, we can benumb the dentine deep enough to cut into the pulp without causing the patient to flinch. Now that we have reached the number of volts we wish to use, you must not turn off the current suddenly, but gradually, until the dial indicates zero.

The time occupied in producing anæsthesia varies from six to twenty-five minutes. Occasionally you find a patient who is extremely susceptible to the current ; for such cases use a low degree of voltage, and a prolonged application.

I will now refer to a few cases from practice :

*Case 1.* Anterior approximal cavity in left upper central incisor, involving at least one-third of the cutting edge, dentine sensitive.

Treatment : Cataphoresis for fifteen minutes, using a 25 per cent solution of cocaine, reaching a maximum of twenty volts. Result, absolute freedom from pain when using a bur. As I wished to use a screw post, I made a second application, which occupied about six minutes, with this result : absolute freedom from pain while anchoring the screw.

*Case 2.* Large approximal cavity in the left superior cuspid, condition of tooth such that I had decided to destroy the pulp. Treatment : two applications of cataphoresis, using the solution of guaiacol cocaine recommended by Dr. Wm. J. Morton, for twenty two minutes, reaching a maximum of eighteen volts in each application. Result, painless removal of pulp and the root and crown were filled immediately. I also wish to state that there was no inflammation or soreness after this operation.

*Case 3.* Approximal cavity in left upper lateral incisor, patient very nervous, dentine hypersensitive. Treatment : catapho-

resis for twenty minutes with guaiacol cocaine, reaching a maximum of twelve volts. Result, almost entire freedom from pain, the patient insisted that I was not cutting in the sensitive part of the tooth, even when I was using a bur in the cervical portion of the cavity. By the use of a 25 per cent aqueous solution of pyrozone, discolored teeth may be easily and thoroughly bleached. To prepare this aqueous solution for cataphoresis, McKesson & Robbins recommended that you take of 25 per cent ethereal pyrozone two parts, water one part, evaporate the ether, then add a small quantity of salt, "1 or 2 per cent," and it is ready for use. Before attempting to bleach a tooth it is necessary that the apex of the root be filled with gutta-percha, or some nonconducting material to prevent the current from carrying the solution through the tooth. Ethereal solutions of pyrozone cannot be used for bleaching by the process of cataphoresis because they are nonconductors. Much stronger currents may be used in bleaching, than we would use in benumbing the dentine.

The instruments necessary to introduce medicines by the process of cataphoresis may be obtained from the Electro-Therapeutic Co., 32 East Twenty-third Street, New York, or from the Galvano-Faradic Mfg. Co., of the same city.

The advantage of cataphoresis over other methods of introducing medicines is that you can carry your solutions not only into soft tissue, but through solid dentine. Many medicinal solutions are nonconductors, and to use such solutions by the cataphoretic process you must add to them a substance that will cause the same to become electrolyte. Thus Dr. Morton adds 1 minim sulphuric acid to about 2 drachms guaiacol, and to pyrozone we would add salt or soda, say about 1 per cent.

It is not necessary that we should be electricians in order to be successful with cataphoresis, but it is absolutely necessary that the operator should take enough time to make the application in a careful and thorough manner. To all such operators I would recommend cataphoresis with the assurance that they and their patients will be benefited many times thereby.

Usually one fifteen minute application will permit the entire preparation of the cavity, but if much cutting is necessary it is advisable to make a second application; some may think this process takes too much time; to such I would say, "Let cataphoresis alone."

While I do not claim originality for this method of producing anæsthesia, yet I do assert that it has enabled me to assure my nervous patients that it is possible to fill their sensitive teeth without pain.

DISCUSSION.

Dr. J. E. KEEFE—Mr. President, Ladies and Gentlemen :

Dr. Moorhead in his paper has called your attention to the fact that cataphoresis or electrical osmosis is not new. It seems to be the prevailing opinion among some of the members of the profession, that this method of medication by electricity is a fad. Cataphoresis or the forcing of drugs into the tissues by electricity has been practiced since 1833. Its application in dentistry however, for anesthizing sensitive dentine is new, and we are indebted to Professor Morton for his work and suggestions in this line.

In our enthusiasm over the first effects of this method of local anesthesia many of us will no doubt claim and prophesy for it wonderful results, but time and practical experience will be our best tests.

In the May Cosmos which I received the day I left for this meeting, there is an article by Dr. Morton, introducing a new treatment which he calls Metallic Electrolises produced by copper and zinc points. In all the recent writings on Cataphoresis, we have been advised to use only platinum or pure gold points for all operations, as these points would not be corroded by the acids with which they would come in contact. Dr. Morton now tells us that he uses copper and zinc electrodes, because they do corrode and with the corrosion obtained from these points, he expects to cure diseased tissue tumors, etc.

The future for the treatment by Cataphoresis is I believe unlimited. Many of our eminent men are already experimenting with it, and we must await their verdicts.

I have made some experiments in pulpless teeth which proved very interesting to me. I do not practice immediate root filling in teeth having putrescent pulps, but I did in the past two months fill immediately two lower six year molars, which I opened and in which I found the pulp dead and very offensive. I concluded to experiment, and by the use of Cataphoresis to thoroughly sterilize the root canals with Black's 1—2—3, with a little salt water added, as a conductor.

I applied the cotton saturated with the 1—2—3 to the cavity

and turned on gradually twenty volts for twenty minutes, then removed the cotton and contents of pulp cavities, and filled with chlora percha immediately, and the teeth have not been sore since. This does not of course prove that the teeth are thoroughly sterilized nor does it prove that this is a safe method of treatment, but the results in both cases have been encouraging.

I have demonstrated to my own satisfaction, that with freshly extracted teeth invested in plaster, I can force medicine through the roots, and I shall continue my experiments on my return and endeavor to secure some good conducting fluid, that will be colored, and will stain the teeth, thus showing how far the medicine penetrates.

For bleaching teeth I can recommend no better method than that of Cataphoresis—using the aqua solution of pyrozone recommended by McKesson and Robbins, although some claim that they obtain satisfactory results by sealing a 25 per cent etherial solution in a tooth for twenty-four hours.

In connection with the subject allow me to tell you of an experience I had with a young man the other day. He was the first patient on whom I tried this Cataphoresis treatment. He is very nervous and has always suffered intensely when having his teeth prepared for filling. Having just received my instrument, I suggested that we try this new treatment. He of course was willing to try anything, and after about a twenty minutes application of guio-cocaine with my rheostadt, I found the dentine completely anesthized, and the cavity was prepared painlessly, much to the satisfaction of the patient and myself. This same patient telephoned me last week and made another appointment. He kept it, and said when he came, that he would in all probability have put off having his tooth filled until forced by pain to do so, had it not been for the fact that I had that new instrument. Unfortunately, I had sent some of the parts of my rheostadt to the nickel platers, and the instrument was disconnected, but I thought I would see what I could do for him, so after adjusting the rubber I tested the cavity and found it sensitive. I then put some medicine into the cavity, applied the positive electrode to the tooth and told him to hold the negative electrode in his hand, and awaited results. I turned on the supposed current and asked him if he felt it. "Oh, yes," he said, "both in the tooth and in my hand." I kept up the deception for about five minutes, then removed the elec-

trodes, and prepared the cavity—painlessly! Now gentlemen, if that was not a case of Cataphoric hypnotizing, what was it?

The doctor refers to the Wheeler volt selector as the instrument he uses in his practice. My experience with the Wheeler Rheostadt was not satisfactory. Owing to its cheap or careless construction, both instruments sent to me got out of order in shipment, and I was obliged to return them. I suggested to the Electro Therapeutic Co., who manufactures the Selector, that they put it together in such a way that it could be opened and repaired at home when it got out of order, and not compel us to express the instrument to New York for repairs. In answer to my letter they wrote that they sealed the Selectors purposely in order to prevent inquisitive electricians from stealing their *valuable secrets* contained in this instrument, and they did not want to have people see the "wheel go round." This statement condemned the instrument with me, and I immediately returned it C. O. D., that being my privilege according to contract.

Admitting that this instrument does all they claim for it, are we justified in working with it when the manufacturers refuse to tell us anything about the construction of it? We must exercise the greatest care in employing electricity in connection with the teeth, and it is necessary to be thoroughly familiar with the instruments used in order to work intelligently.

Any electrician can make a rheostadt that will do this cataphoric work, and such an instrument should not cost over $25.00 complete, and they can be made for much less. I would call your attention to the volt Selector exhibited by Dr. Custer. It is simple and very inexpensive.

Dr. E. L. Custer: I do not know that I can say anything additional to what has already appeared in print in the last issue of the *Dental Review*. But since that time, however, I have been making a few experiments in order to get some statistics, so that any dentist might construct his own appliance and save the expense also of a volt meter, as well as ampere meter. I can best illustrate this on the blackboard, and that will be all I have to say, inasmuch as the speaker who has preceded me has pretty well covered the ground. So many statements which are peculiar have appeared in the reports of cases from an electrical point of view, that I can only refer you to articles I have already written.

(Dr. Custer here described his apparatus, illustrating on the blackboard.)

Dr. Wassall: Dr. Custer has been kind enough to describe his apparatus, but he has told us nothing about the results he gets from the use of it. We would like to know the results he obtains from the use of this method.

Dr. Custer: The results have been exactly in proportion to the length of time and intesity of current. In the paper this afternoon the temperament of the patient and the susceptibility to the electric current were factors that were discussed, but of course it is well known that we can apply but little current in certain cases, and in such instances we must not expect to get as good results. The final result is exactly in proportion to the amount of current you use and the amount of agent which you have projected by it. I have noticed that decalcified dentine, or dentine from which the enamel has been worn off by abrasion, is almost like enamel, a nonconductor probably from the infiltration or filling in of the tubuli. In those cases you get but little current through as the preparation is not very painful at any time.

Dr. C. B. Rohland: I would like to know whether any of the gentlemen who have had experience with cataphoresis in the use of cocaine have ever found any systemic effects from its use—whether there have been any poisonous effects from the use of cocaine in that way, or whether they have pushed it far enough to have systemic effects?

Dr. Keefe: I have never noticed any systemic effects, because I have never used the aqueous solution of cocaine either on the mucous membrane or on the tissues. I have done some experimental work on the tissues of the arm and mucous membrane. With the guaia cocaine, I believe I neglected to mention that the results obtained by this method on the dentine were all satisfactory, but I did not get good results in seven or ten minutes. They will average twenty minutes.

Dr. Rohland: The point I desire to bring out is this, whether there is any danger from the use of cocaine employed in the manner described, and whether caution should be exercised the same as when it is used hypodermatically. That is the point I desire to bring out.

Dr. Wassall: It seems that I was unsuccessful in getting an

answer to my previous question. I wanted to know from Dr. Custer just how useful it was in his practice, what the results were in diminishing the pain of dental operations, whether it had a hypnotic effect, as Dr. Kirk found it had sometimes, and whether it is a useful agent in producing anæsthesia.

Dr. KEEFE: I think I have just answered that question. I have always had good results from the use of it in all cases. I have never yet had a failure. I keep it up until I get results.

In regard to Dr. Rohland's inquiry, I will say that the cocaine is held in solution by the guaiacol. It does not enter the system as the aqueous solution of cocaine would, and therefore there is no possibility of toxic effects, and in using the drug on the mucous membrane or on the arm we do not have to leave it on over two or three minutes to produce anesthesia. One can use any kind of volt meter for this purpose, run it up to ten volts and the patient does not feel it at all. He feels only a smarting from the guaiacol.

Dr. CUSHING: Any constitutional effects?

Dr. KEEFE: No.

Dr. CUSTER: I have been watching the cases as closely as possible and have thus far seen no bad results. I have been tabulating every case at the time of the administration and have seen no systemic effect. The fact is we cannot have a systemic effect from the amount of cocaine which is projected.

Dr. CUSHING: Will you answer Dr. Wassall's question?

Dr. CUSTER: There is no question in my mind but what it is an effective agent, and the effect is in proportion to the amount of cocaine which you project in there. It is practical and in my own practice I probably use it once every other day. It averages that during the week. I use it in those cases where we resort to something unusual to meet the case in hand. In those cases I find that it does give the results which we are after.

Dr. CUSHING: Uniform success?

Dr. CUSTER: Yes, in proportion to the length of time and strength of current.

Dr. W. W. MOOREHEAD: In regard to the toxic effects of cocaine, I wish to state that I noticed in the report of one of the eastern dental societies a statement made by a dentist that he had never been able to use a 4 per cent solution in his own mouth; that the smallest quantity produced an irregular action of the heart. But

he has had a number of operations on sensitive dentine in his own mouth performed by Dr. Gillette, using a 25 per cent aqueous solution of cocaine without noticing any effect whatever. By the process of cataphoresis the cocaine is not thrown into the circulation at once, but it takes from five to twenty minutes to reach the circulation, and in obtunding the sensibility with a 25 per cent aqueous solution it takes only a small quantity on a pellet of cotton to produce the necessary anæsthesia.

Dr. CUSHING: May I ask what amount of the solution is taken up in an ordinary operation for producing the anæsthetic effect?

Dr. MOOREHEAD: I could not say. I do not suppose that more than a minim, if any, is taken up, because even after the application there is still some in the cotton that has not been carried through.

Dr. CUSHING: You say that in the ordinary operation about one minim of a 25 per cent aqueous solution of cocaine penetrates the tooth and enters the system?

Dr. MOOREHEAD: I would suppose that to be all. In regard to guaiacol, I have been adding enough more cocaine to make a 20 per cent solution, which gives better results than the 10 per cent solution as prepared by McKesson and Robbins. The only objection I have to guaiacol is its odor which is similar to creosote. Some people object to it.

Dr. CUSHING: Your success has been uniform?

Dr. MOOREHEAD: Yes. In over three months' practical use I have only found two cases which were so susceptible to the electric current that it was impossible to use more than ten volts and the anæsthesia in these cases was only partial. But in the majority of cases by prolonged application the anæsthesia was satisfactory.

Dr. CUSHING: The length of time seems to be the essential point in these cases?

Dr. MOOREHEAD: Yes. Some patients require more time than others.

Dr. W. V.-B. AMES: In regard to the matter of toxic effects from the use of cocaine, this phase of the subject cannot enter into the question if the drug is used as it should be, very carefully, and you only get the effect of the cocaine by cataphoresis. I do not believe it enters in such a way as by injection. I believe it is only

carried into the tissues as far as you want it. When you get pain no longer from the current the cocaine has only been carried into the tissues as far as necessary to bring about results on those tissues in which you wish to operate.

After Dr. Gillette read his paper last summer, and it was published in the *Dental Cosmos*, I took a battery which I had in my office at the time and began to do some of this work. I did not get very good results in the first few cases of sensitive dentine in which I tried it, simply because I did not have sufficient voltage and take the necessary time. But I did eventually get excellent results in the extirpation of pulps. There is no question about this method being practical, and it is a process from which we can get wonderful results.

Dr. Cushing: You told us a moment ago that you did not get good results in obtunding sensitive dentine.

Dr. Ames: Yes, but it was simply because I did not have proper voltage and take the time to do it at first. I would have secured good results if I had had a better apparatus with which to do the work, and had taken the time to do it well.

I have been reading Dr. Morton's article, and one of the first things that impressed me was that there is too much ado about the difficulties of this method and the complicated apparatus that is necessary in using it. Any one who has done electrolytic work can make use of this method. This subject was touched upon by Dr. Morton in his article in the May *Dental Cosmos*, wherein he speaks of "metallic electrolysis." The term is not very expressive, yet the suggestion strikes me as opening up a wide field in cataphoresis. He uses the electrodes that were spoken of by Dr. Keefe. Personally I prefer a zinc electrode to copper because it is not so apt to create the bad taste and discoloration as is caused by copper salt. I would expect as good results from using a zinc electrode in the treatment of all pyogenic conditions of tissues about the mouth. I had some ideas bearing on this subject ten years ago, but did not think at that time of the application of the cataphoretic principle. By this method we not only dissolve the zinc, but by the principle of cataphoresis the zinc salts are carried into the tissues. Your elements find their way toward the positive pole and act upon it, and the process of cataphoresis carries the resulting salt right in. In nine cases out of ten of filling operations we

can get along without cataphoresis, but in occasional cases it can be used to great advantage.

With reference to bleaching teeth, I do not think it is worth while to have this apparatus for that purpose. I have bleached teeth beautifully with it for years, but they do not remain so better than when they are bleached by any other method.

For the sterilizing of roots containing putrescent pulps the process has been highly satisfactory. Some years since when the immediate root filling craze was on I found that this was the most reliable means at my command for sterilization. I took a platinum positive electrode and decomposed the pus right in situ, making the sterilizing agent from it.

Dr. CUSHING: What was the result of your work at that time?

Dr. AMES: I was enabled to sterilize the root immediately with the most satisfactory results. In my work of this kind for ten or a dozen years, I have been decomposing iodide of potassium in pyorrhœa pockets and fistulæ, and having some of the iodine carried into the tissues by cataphoresis without knowing of all that I was accomplishing. The light on cataphoresis opens a large field.

Dr. MOOREHEAD (in closing the discussion): A few words in regard to the process of bleaching. Here are two molars which to start with were of the same color. They had been extracted for some time. One of them I bleached according to the process given in the paper. The other is just as it was. You will observe that not only the crown is bleached, but also the apex of the root. By comparing the two you will notice a decided difference in color.

In regard to volt selectors, I have no special claim to make for the Wheeler volt selector, but I must say I am much pleased with Dr. Custer's volt selector which was used in the clinic. It appears to be simpler and a better arranged instrument than the one I have.

Dr. TAYLOR: You have made reference to bleached teeth out of the mouth, what are the results in the way of permanency of teeth bleached in the mouth? Do they remain bleached?

Dr. MOOREHEAD: My experience with bleaching has not been sufficiently extensive to say whether the teeth remain bleached or not.

[NOTE.—The remarks of Dr. Keefe in pp. 104, 105 and 106 have been kindly corrected by himself and are printed in the form desired.—PUB. COM.]

# REPORT OF THE COMMITTEE ON DENTAL SCIENCE AND LITERATURE.

By A. W. Harlan, M. D., D. D. S., Chairman, Chicago.

In presenting the annual report for the year of 1895-6, we find that one of the distinct additions to science is the work of Dr. G. V. Black on the physical characteristics of the human teeth, and his further work on the properties of amalgam and other filling materials. This has been presented to the world through the columns of the *Dental Cosmos*. Another aspect of scientific advancement is the perfection of the application of cataphoresis and the cataphoretic application of drugs to the soft tissues and in the tissues of the teeth for the benumbing of sensitiveness in dentine. Dr. M. H. Cryer presented, at the late meeting of the American Dental Association, some original work on the cranium and the jaws. C. Rose has done a little work in histology during the year, supplementary to his former work.

Nothing new has been evolved in morbid anatomy or pathology worthy of note. The discovery of the X ray, by Prof. Röntgen, has promised to revolutionize some departments of surgery. So far, in its application to dental surgery we have not found anything of much practical value. The location of foreign bodies in the jaws or the antrum or some of the remote parts of the mouth and pharynx may be of value if such bodies cannot be detected by other methods already known.

So far, in the domain of dental surgery the antitoxins have not been utilized; but we think there may be here a field for their use in the destruction of morbid growths more or less inaccessible to the knife of the surgeon.

The serial article by J. L. Williams, on the structure and formation of dental enamel, has received, so far, the highest commendation; and we await its completion with impatience, as likely to throw some new light on this much studied subject. These papers were presented to the Royal Society—an unusual distinction for an American.

## LITERATURE.

No strictly new dental journal has been presented to the profession in this country. A few little leaflets have appeared in foreign countries, the most conspicuous being the Dental Journal in Tokio, Japan. One Japanese journal has been issued for several years. The one here referred to is a new one. A new one appeared in Venezuela, also.

From year to year we find a steady growth of the transactions of societies, most of them being an account of the work done by State societies. These annual volumes grow in value, and as educational factors are not to be despised.

There is a steady decrease in the reprint work of various authors, which we heartily commend, as most of them were used as a sort of sop thrown to nonprofessional readers as an inducement for patronage much more than as educators of the public. The reprint fad is about dying out. Nowadays, when dental journals are so numerous and cheap in price, there is no excuse for reprints except in rare instances.

Here and there bodies of dentists are doing some very effective work in making addresses to the classes in public schools, more notably in Great Britain than in the United States. This work is of great value, and should engage the energies of a greater number than are now interested in it. The public press is a power for good or evil, as must have been noticed by all who are present, and the dissemination of good reading matter on physiology, pathology and hygiene as related to the whole body must prove a great benefit to mankind.

The year has not been so prolific in the output of notable works on dental subjects as some former years.

We have a new edition of Mitchell's Dental Chemistry, a new edition of Harris' Principles and Practice, an up to date volume of Catching with a new department added—Science. Prof. Frank Abbott has sent out a new book on dental physiology, pathology and practice, of doubtful value, especially the new part relating to practice. Newland-Pedley one on diseases of children's teeth and their treatment.

A new book on the pathogenic bacteria, from the hands of McFarland is excellent reading. Stocken's Dental Materia Medica, with new editors, is not as good as the last work of the original author, although it is much smaller in bulk.

Angle's little work on Orthodontia comes out in a fourth edition. Senn on Tumors is an exhaustive work.

There is a new book by Miller, "Lehrbuch der Conservirenden Zahnheilkunde," in German. A new edition of Gorgas' Dental Medicine has appeared since the last report.

Useful Hints for a Busy Dentist, by Steele, Vol. II., came out in 1895.

Harry Rose has produced a new book on vulcanite work.

Ch. Godon and A. Ronnet have published their observations on dental education in the United States.

E. Beltrami has published a work on articulation in man, and L. Frey one on affections of the mouth. All three of the above are in French.

Th. Dreutz has published a work in Dutch, on development, E. W. Roughton one on surgery for dentists, and Hopwell Smith's papers have been republished on Dental Microscopy.

It does not follow that the best reading for professional purposes is to be found between the covers of bound books. Indeed almost any subject of vital importance to a practicing dentist is better studied from the original sources in the periodicals and in the transactions of societies. This is notably so in the search for new views on pathology, and subjects of a strictly scientific character. Some of the best work of men like Tomes, Mummery, Magitot, Miller, Black, Andrews, Williams, Peirce, Cryer, Allan, Caush, and others will be found in our periodical literature. From year to year this sort of pabulum has been growing better in quality. Nearly all the new discoveries and inventions, methods of practice and results obtained therefrom, first see the light of wide dissemination through the above agencies. We need not think that the march of progress is arrested because many new books are not brought out in every year; we should rather congratulate ourselves that time, that remorseless destroyer of senseless vaporings, will under such circumstances, pulverize the vacuities of immature authorship, and leave us only the best to add to our already large stock of positive knowledge. We are in the rapidly moving era of advancement, and it is not strange that much of what we see, hear and read should have only our cursory glances.

This committee, in the endeavor to present a few kernels from the vast amount of production, has no light labor to perform; and it is rather from a fear of presenting too much that these reports

are so brief. From the day that this work was incorporated in the annual proceedings of this society can we date the gradual development of the understanding of our members ; and we think that the work should be continued with slight variations from year to year, in order that the whole membership of the profession in the society should benefit, and that these benefits should be reflected into the work and conduct of every man throughout the State. Show me a man who reads, ponders, experiments and deduces conclusions from the latter, and I will point out to you a progressive man, a good citizen and a force in his community.

Many dentists and physicians would be benefited by reading a good encyclopedia on medicine, surgery or chemistry, or one of a more popular kind. Works of this character open up vast fields not touched upon in a college course of study. The work done by these authors and condensers at first sight might appear too trivial for professional notice ; but I assure you that two or three hours a week spent in this manner will fascinate you, as it did the writer, and great results are to be expected from such study as can be found in Quain, Heath, Morley, and Muir, Ashhurst, Stedman and other works of this character. I would not stop here, but after a time some special study will fix itself on you, and then you can pursue it from year to year with increasing interest and profit, not only to yourself, but to your clients and professional associates.

# REPORT OF THE COMMITTEE ON DENTAL ART AND INVENTION.

By Geo. J. Dennis, M. D., D. D. S., Chicago,

Your committee reports so far as it has been able to learn the following advances in dental art and invention during the past year. By the S. S. White Dental Mfg. Co.:

A portable dental chair.

A new seamless gas cylinder made from a single piece of steel, bearing a test of 3,000 pounds, with a much greater capacity for the same weight than with the former styles.

A spittoon bracket (No. 4) without catch or spring.

An improved pedal and pitman for the S. S. White engine.

A gasometer designed to yield to slight inhalations, and to prevent waste when operations are suspended.

Tartar lithia and sulphur tablets whose use has been explained in a special brochure.

A 220 special reducing resistance.

Extracting forceps (No. 235) the beaks of which have an angular shaped cavity.

Amalgam carriers.

Weston's xenolite cement, which is claimed to be not affected by climatic conditions and wears smooth and glossy in the mouth.

A rubber tray band forming an adjustable wall about impression trays to facilitate pouring.

A shaded pink rubber to produce a deeper color, as the distance from the necks of the teeth increases.

Pulp canal dressers of iridio-platinum with flattened ovoid shaped blade, squared at the end, permitting the cotton to be readily wound about the blade, and easily removed in the packing of the pulp chamber.

A napkin holder and clamp made of nickeled steel wire covered with hard rubber to be used with cottonoid and designed more especially for posterior teeth.

Cotton pellets in four sizes.

A set of vulcanite finishers on the order of the Kingsley scrapers.

Warren dental ledger.

Dentos—An aluminum phosphate plastic, claimed to contain no zinc oxide, and the liquid, essentially pure phosphoric acid. Especial hardness, and rapidity of setting is claimed for it.

Capsicum plasters.

Additions to the Hollingsworth system of contouring dies and press.

A flask lifter and holder.

The Bosworth direct action mallet—another form of automatic mallets.

Aluminum handled mouth mirrors and examination glass.

Sheet steel in thin strips for matrices.

A dental speculum, to see by direct and reflected light the closed teeth from molar to molar.

Guiacocaine.

Approximal trimmers for use at cervical and buccal margins.

Wire stretching pliers, by Dr. E. H. Angle, for extension and tightening of regulating springs.

Post barbing pliers.

Tooth holder—useful in grinding teeth.

Black porcelain teeth

Ransom & Randolph, Toledo, Ohio:

An anæsthetic pencil, the invention of Dr. Creager, for use in crown and bridge work and in minor surgical operations. The holder is made with a sliding piston, which works in a cylinder and forces out the medicated point as it is worn away. The points are composed of cocaine, menthol, trinitrin, and antiseptics which readily dissolve at the temperature of the mouth.

A warm air chip blower, by Dr. Harvey. The temperature of the air is indicated by a thermometer, the tube of which is marked to show the degree of heat most acceptable to a sensitive tooth.

The Dental Protective Supply Co.:

An electric engine wall bracket, made entirely of metal, nickel plated, of ornamental design, having two bearings, removable in case of wear. The motor (110 volts) hangs in the rear of bracket on a substantial hanger; the driving shaft is attached direct to motor, obviating long driving cords and pulleys. The rheostat is fire proof, placed on the floor out of the way, and is controlled by

a lever back of the chair, to which it is connected by means of wires.

The Ritter Dental Mfg. Co.:

The Columbia dental engine. The motor is encased in a neat copper ball, and attached directly to cable and hand piece. It is suspended from the ceiling by its own current cord running through pulleys and balanced by weights near the wall. The rheostat is of the round collar box shaped variety, the regulating lever permitting the foot to remain on the floor. The power may be obtained from primary or storage battery or from street current.

A laboratory motor, to the shaft of which is directly attached the chucks. It is completely inclosed, dust proof and of neat design and construction.

The Buffalo Dental Mfg. Co.:

An improved siphon for gas regulators and steam gauges. It does away with the large iron crooks and prevents rust. Claimed not to corrode. Malleable iron tongs nickeled, for handling flasks.

A flask lifter, by Dr. DeHart, of malleable iron. It is a perforated iron plate to be placed beneath flasks when boiling out wax or packing rubber. To this plate is attached a handle, by which flask and plate may be lifted.

The Wilmington Dental Mfg. Co. also claims to have gotten out some new articles within the last year, but their pressure of business is so great that it is impossible for them to furnish your committee with the necessary data.

Dr. J. Austin Dunn, Chicago.:

A cervical clamp after the following description. The labial jaw passes through a slot in the lingual jaw, and is movable forward and back so as to accommodate any desired length or reach. When one jaw is being adjusted, the other will not get out of place. The lingual jaw is bent at such an angle as to form an important part of the clamp. The inner side of the beak is concaved so as to conform to the linguo-gingival ridge of the tooth. It slides under the free margin of the gum at this point and will not impinge or crush the tissues, giving little or no pain. The pivoted, right-sided beak consists of a long narrow beak, a long wide beak, and a short narrow beak. It will accommodate itself to any angle or irregularity of the teeth or tooth surface. The curve and direction of the two jaws is new, and such that when in posi-

tion the labial jaw naturally takes a double bearing which prevents the usual slipping out of place. Again when the clamp is in position, the teeth of the opposing jaw can nearly close together before striking the clamp. The small bow was first designed, but at the suggestion of Dr. Cushing the large bow was adopted for more room for work. The small bow is convenient for use on small teeth.

Dr. A. S. Rudolph, Carmi, Ill.:

A dental lathe tool for finishing and polishing rubber plates. It consists of soft rubber and adjustable form on side. The abrading material is a band of emery cloth fitting over the rubber head. Expanding the head catches the emery band and holds it firmly. The rubber head may be made of any size and attached to any lathe chuck.

Dr. P. A. Palmer, Chicago.:

A clamp and wire ligature for cervical cavities. He uses soft copper wire of about 26 gauge, bent to conform to the festoon of the gum, the ends extending high enough into the interdental depressions, on either of the teeth to be operated on, that the wires may be caught by clamps with beaks fitting into these spaces. It is claimed that no leakage of the dam will occur with this appliance, and that its application is universal.

Dr. F. H. Stafford, Chicago:

An improved dental light and heater. This invention is intended to provide an apparatus for the use of dentists, comprising a gas and electric light, adjustable at the dental chair without requiring the operator to leave his working position; connected therewith are heating devices, suitable for the several applications sometimes necessary in dental work, such as annealing gold, softening gutta-percha, or any plastic substance. By the aid of this invention the operator can perform all these processes without leaving his working position at the chair. Attached to the dental bracket it is always at hand when wanted, and is easily pushed away when not in use.

Dr. W. O. Butler, La Harpe, Ill.:

A combination steel and celluloid matrix. The steel of thickness of a clock spring tempered to springiness and some rigidity holds the thin celluloid wall next the cavity. When the filling is completed the steel band is removed, leaving the celluloid matrix in position so that the filling will not be broken out before hardening. It is useful with cement and amalgam.

Gilmer Bros., Quincy, Ill.:

A method of continuous gum, for which is claimed, first low cost, not to exceed $5.00, less labor in construction; the use of teeth without platinum pins, low fusing porcelain, reduction of weight; articulation maintained perfectly, and a better fitting plate than with high fusing porcelains.

Dr. T. G. Wonderly, Galena, Ill.:

Partial impression cups. Upper and lower impression trays, the openings so fitted with sectional pieces that any part may be removed, allowing the teeth to pass through the openings, also a slot in the upper tray holding in position a movable palatal plate. With this plate the impression material may be easily forced against the palate. This plate may be readily bent to conform to any arch.

Dr. John G. Harper, St. Louis, Mo.:

A double pointed graver, for finishing vulcanite. It consists of an ordinary chisel with its edge cut into a V-shape, giving two edges and points to work upon.

Aluminoid is a combination of rubber cement, any rubber dissolved in commercial chloroform and aluminum powder. It is used to line the palatal surface of rubber plates.

To make: Dissolve rubber, such as is used for vulcanizing, in commercial chloroform. It should be of the consistency of thick molasses. Incorporate with this about twice its bulk of aluminum powder; mix well, and this gives aluminoid. To use: Invest your model with liquid collodion, and apply the aluminoid, which should be thinned with chloroform, so that it will flow like paint; give four coats, allowing five minutes for each to dry; allow ten minutes or more for the last coat; the case being packed close, vulcanize and finish with brush and pumice, ending with chalk.

The aluminum powder can be procured from dealers in art supplies.

Dr. W. V-B. Ames, Chicago:

Rubber plates. Using velum rubber about the posterior edge of plates in upper cases to produce adhesion. The palatal portions of full upper plates may be done away with. In full lower cases a band of the velum rubber around all borders of the plate produces one with almost perfect suction.

G. H. Parsons, St. Louis:

An oxygen gas stove. To be attached to any gas jet. It

is convertible at will from an illuminator into a broad or narrow fuel flame, superior to an ordinary Bunsen burner in heating properties.

Wilmot, Castle & Co., Rochester, N. Y.:

A dental sterilizer. It consists of an oval metal drum, 7¾ inches long, 5¾ inches wide, and 6½ inches high. It is divided perpendicularly into two compartments. In the upper part of one end is a movable pan designed to hold the disinfecting fluid; the other end to contain a disinfecting sand.

Dr. G. A. Bronson, St. Louis:

Heavy pliers. Heavier than the ordinary pliers and useful in removing wedges, small roots, deciduous teeth, etc.

The Dental Protective Supply Co.:

A rubber nozzle or cup. To be placed over the mouth of bottle, the needle of a hyperdermic syringe thrust through it, allowing the bottle to be inverted and the syringe readily charged.

Dr. P. H. Morrison, St. Louis, Mo.:

A rubber disk and mandrel in which the disk is vulcanized directly to the head of the mandrel.

Dr. L. E. Custer, Dayton, Ohio:

In the process of cataphoresis it is found that the more gradually the current can be increased the less will be the pain to the patient. To meet this requirement a rheostat is operated by a clock mechanism by which the current is very lightly increased each second. This not only overcomes the pain produced by uneven administration, but produces as rapid results as if the administration were carried on by less frequent but larger increases. When the operator attends the rheostat himself he is prone also to push the administration faster than he would otherwise. This appliance also allows the operator free to attend to the process at the tooth. It is illustrated and described in the May *Dental Review*.

It is also found that the anode in the cavity must be held perfectly quiet, and to meet this requirement a device is slipped over the ordinary rubber dam clamp which holds the platinum point firmly in the cavity. This appliance is made of hard rubber which insulates the anode from the clamp, thereby avoiding any danger of getting current through the rubber dam clamp.

When these two appliances, the clock rheostat and the fixed anode are used together in any case, the operator saves time and

is free to attend to other work about the chair, he only having to see that the cavity is kept flooded with the solution.

Dr. Custer also operated an instrument which he made for the direct current, whereby a cautery heat of 6 amperes and 5 volts can be derived from 1 ampere at 110 volts. In order to get 6 amperes in the ordinary way it has heretofore been necessary that about 7 amperes be taken from the main line. This at 110 volts is a little over 1-horse power, which in some cities is not allowable. The dentist is also paying for a large quantity of current, which is lost in the rheostat. But with the instrument shown the amperes are increased and the voltage decreased.

It is done in this way. A constant current cannot be transformed, but if that current can be interrupted or alternated it can then be. So a vibrator is put in operation which interrupts the current and by means of an induction coil suitably wound, a secondary current of high amperage and low voltage is produced. In order to lessen the spark at the vibrator and thereby make the interruptions more distinct, a Leyden jar of forty alternate layers of tinfoil and parafine paper is shunted about the vibrator.

Dr. C. W. Jones, St. Paul, Minn.:

A root trimmer and facer. It consists of an engine instrument, having at its end a concave convex tip about three-sixteenths of an inch in diameter with its concave side prepared after the manner of a rasp file. It is tempered to the hardest steel temper. In rapid rotation it is claimed to cut smoothly and quickly, easily attacking the enamel rods at their ends and breaking them along their lines of cleavage, without lacerating the gums. Accompanying this instrument is a shield which encloses the instrument on all but its cutting surface.

A rotating knife. It is used for removing gum tissue from over the third molars. It consists of a concave disk, sharp and thin, of about three-sixteenths of an inch in diameter revolving in a stationary shield. Its appearance seems to indicate that it will be useful.

# REPORT OF THE SUPERVISOR OF CLINICS.

By J. W. Cormany, M. D., Mt. Carroll, Ill.

Dr. J. W. Wassall, of Chicago. Apparatus for compressed air at the operating chair. The supply of air is derived from any source, and led to the rear of the chair; likewise, the electricity for the air warming handpiece. The air is used from two silk covered tubes and handpieces, which when not in use hang on the back of the chair, one for cold and one for warm air. The cold air handpiece is a simple, hard rubber affair, with a metallic nozzle and a revolving, graduated valve. The tube for the air warming handpiece contains conducting wires for the electrical current. The valve of the handpiece controls both the air and the electricity with one movement. The air is warmed by the nozzle, which terminates as a coil of platinum wire imbedded in porcelain through which a very small current of electricity only is required to be passed. The value of the handpiece lies in the fact that the air is given the required temperature at its very point of delivery.

Dr. A. W. McCandless, of Chicago. Demonstrating use of No. 60 Fellowship foil. The advantage claimed being that a filling made of this foil is not so apt to pit as a filling made of No. 4 folded to 32 or any other thickness, because one weld will make a more perfect filling than where eight are made on a piece of gold of equal thickness.

Dr. W. H. Taggart, of Chicago. An accurate process for fitting bands to badly decayed roots. After the root has been ground to the gum line, or beneath it if necessary to get a good, definite outline, and the root trimmed, an impression is taken with a ball of pink gutta-percha, slightly warmed but rather resisting in order to push the gum away. This impression is imbedded in plaster, and while this is yet plastic a small rubber tube is placed over the gutta-percha, and as soon as the plaster has hardened pour into this tube Melotte's metal directly onto the gutta-percha impression. This metal die is then trimmed with a coarse saw and enamel chisels so as to have parallel sides. The band is then fitted to this finished metal root, and is absolutely accurate.

Dr. A. H. Peck, of Chicago. Case was a porcelain faced bicuspid crown. Band 22 k. gold, 28 gauge ; backing pure gold, 36 gauge, using an Ash tooth for the facing ; 20 k. solder was used for the band and the occlusal surface. The attachment of the backing to the facing, the attachment of the post and the attachment of the facing to the shell were all done at one soldering, a platinum wire having been twisted about the parts to hold the facing and the band in proper relation the one to the other. The only point the clinician wishes to bring out in this piece of work is the fact that all the soldering can be done with no investment at all, and without the aid of the blowpipe ; only the flame of a Bunsen burner being used. He has soldered all cases of this kind in just this manner for the past two years, and as yet has had no failures.

Dr. E. M. Robbins, of Carthage. Large crown cavity in second lower molar, right side, filled with No. 4 soft gold and No. 3 tin foil. Main body filled with gold and tin and finished with cohesive gold.

Dr. J. H. Prothero, of Chicago. Preparation and filling of a proximal incisor "step cavity." Name of patient, Chas. Brown. Left superior central incisor, cavity on distal surface. Step was cut on lingual aspect of tooth two-thirds across the incisal edge, disto-mesially. Base of cavity was flat, and at right angles to long axis of tooth, with two triangular retainers. Step was also flat, and at right angles to long axis of tooth, made at the expense of lingual plate ; but the labial plate was cut slightly and beveled toward lingual surface. Retention by slight groove in base of step. Cavity was filled with Pack's cylinders No. 4 semicohesive condensed with a hand mallet manipulated by operator.

Dr. J. E. Keefe, of Chicago. Patient, Chas. Brown, colored. Cataphoresis : twelve minutes' duration ; 30 per cent aqueous solution of cocaine. Result, complete anæsthesia. Cavity, upper left central incisor, posterior proximal step cavity, filled by Dr. Prothero.

Dr. A. W. Harlan, of Chicago. Pyorrhœa alveolaris. Dr. Harlan treated five cases, the first being incipient pyorrhœa. After the removal of all deposits with instruments sterilized in boric acid, saturated solution, the case was injected with an emulsion as follows :

Alumnol.....gr. v.
Resorcin.....gr. v.
Oil gaultheria.....min. i.
Water, minims ad. q. s.....m. x c.

This is used once in three days.

*Case. 2.* This case involved three inferior incisors, two molars and one bicuspid. After the surgical treatment a 2 per cent solution of trichloracetic acid was injected into all the pockets, to be followed in three days with the first prescription for a period of about twenty to thirty days, every third day.

*Case 3.* Inferior third and inferior second molar. As the gums were sensitive, chloral-camphor was used as an anæsthetic. When the surgical work was done—and having been done painlessly—the pouches were injected with sulpho-carbolate of zinc, 5 per cent solution, to be repeated in three days.

*Case 4.* Superior molar without antagonist. Anæsthesia was induced locally with chloral-camphor, and the pockets treated with acid trichloracetic, 2½ per cent in water.

*Case 5.* Superior lateral incisor and cuspid, with a pouch on the lingual aspect of the incisor and one on the mesial surface of the cuspid. In three minutes anæsthesia was induced with chloral-camphor. and all deposits having been removed, the pockets were injected with acid trichloracetic 5 per cent.

Dr. Harlan used platinum and gold needles for injecting pyorrhœa pockets. They are brought to a red heat in a spirit flame, before being used under the gums, in every case. When teeth need ligating for a time pure silver suture wire is used, as the pathogenic bacteria will not grow on a silver plate. (See Johns Hopkins Hospital reports.) When teeth are to be banded he prefers silver bands to either gold or platinum. He demonstrated that concentrated lactic acid has no solvent effect on either salivary or serumal calculus. It does have such an effect, however, in weak solutions, ½, 1, 2, 3, 4, 5 and up to about 11 per cent; after that its action is very slow. Dr. Harlan exhibited a gold crown set with gutta-percha dissolved in carbon disulphide. The solution should be very thick, and the bulk of the crown must first be filled with gutta-percha, slightly warmed.

Dr. Arthur G. Smith, of Peoria. Patient, F. W. Conkey, of this society, Homer, Ill. Condition was a missing second bicuspid on the right side of superior maxilla. The adjoining first bicupids

and first molar being very solid and strong teeth, perfectly sound with the exception of a small amalgam filling in the distal surface of the bicuspid. Had time permitted, I should have preferred to replace this amalgam with gold before inserting the bridge. The tooth used was an ordinary plate facing backed in the usual way and soldered to an iridio-platinum wire which had been previously bent and fitted into slots in the two adjoining teeth. The work was set first in cement and then further strengthened by building over the anchorage wires with cohesive gold. This operation is designed to meet that class of cases where one or two teeth are missing, and where it is desirable to replace them without displaying any gold or destroying the pulp in the teeth used for anchorage.

Dr. B. Newsome, of Minonk. Selected upper left central incisor root. Prepared the root, made Pt. cap to fit the end of the root, using Pt. 30 G. for the band and Pt. about 35 or 36 G. to cover the end of the root, using pure gold as solder. Then fitted a post of iridio Pt. passing it through the cap (which is in position on the root) and into the pulp canal. Then selected porcelain facing ground to fit, waxed to position with post and cap in place. Removed all together intact from the root; invested in silex and plaster; when set, removed wax, attached pins of the facing to the post, also cap to the post, by soldering with pure gold. Removed all from the investment; ground the pins and post down until they could be easily covered with the body. Finished by filling in and contouring with Downie body and baking in Downie furnace.

Dr. Garrett Newkirk, of Chicago. Clinic on the forming and tempering of instruments, using therefor broken and discarded points such as accumulate in every dental office. The tempering was done by immersion of the points, heated to a bright cherry red, in ice water. He also exhibited various forms of scalers, chisels and excavators, made by Drs. Mariner, Cushing and himself. A principal feature in the shaping was that of the double curve or bend, by which the cutting edge is brought as nearly as practicable in line with the handle of the instrument.

Dr. Geo. J. Dennis, of Chicago. Fused a Rose mineral compound for a gum section of three teeth, using the Custer electric furnace. Time thirty minutes.

Dr. A. S. Waltz, of Decatur. Subject, Dr. Conkey, Homer,

Ill. Used tin foil No. 3, and No. 4 gold foil "Williams' untrimmed," equal parts combined, in right inferior second molar crown cavity.

Dr. W. V-B. Ames, of Chicago. Vulcanite plates with flexible rubber edges for securing better atmospheric retention. Pack flasks in usual way with ordinary vulcanizable rubber, using draughtsman's tracing cloth between the halves of the flask to permit separation. When the mold is accurately filled with the ordinary rubber, as much of this is trimmed away with scissors as it is desired to replace with the flexible plate rubber, Dougherty's or its equivalent, this packed and pressed to place and the case vulcanized for three hours or more. For upper plates the edge in the palatal region can be just back of the rugæ, leaving the palate uncovered. The flexible edge on uppers needs to extend only from a point back of the buccinator muscle on one side across the palatal region to the same point on the opposite side. For lower dentures the flexible edge must constitute the entire periphery of the plate. Samples shown show atmospheric retention impossible to secure by plates made of hard rubber entirely. The model should be trimmed according to best judgment of operator, where flexible rubber is attached.

Dr. John G. Harper, of St. Louis. Aluminoid. Aluminoid is a combination of rubber cement, any rubber dissolved in commercial chloroform, and aluminum powder. It is used to line the palatine surface of rubber plates.

*To make.* Dissolve rubber (such as we are furnished for vulcanizing) in commercial chloroform, it should be of about the consistency of thick molasses, incorporate with this about twice its bulk of aluminum powder; mix well. This gives you aluminoid. Invest wax upper plate in usual way, open and remove wax.

*To use.* Coat your model with liquid collodion and apply the aluminoid, which should be thinned with chloroform so that it will flow nicely, like paint; give four coats, allowing five minutes for each coat to dry; allow ten minutes or more for the last coat to dry. The case being packed, close and vulcanize; finish with brush and pumice, ending with chalk. The collodion and aluminoid are applied with camel's hair brushes. The aluminum powder can be procured from dealers in art supplies. The cost is small, requires but little time to apply, and adds much to appearance and comfort of plate.

A case was also exhibited of a girl of sixteen in whose mouth about ten of the deciduous teeth were still present.

The case of Dr. A. J. Curry, of Streator, was also exhibited. Dr. Louis Ottofy, of Chicago, implanted the right upper central incisor in November, 1887. The tooth is in perfect condition.

DISCUSSION.

DR. WASSALL'S CLINIC.

Dr. GILMER: Do you use the same means to turn on the air that you do to turn on the current of electricity?

Dr. WASSALL: Yes.

Dr. GILMER: I did not notice how you regulated the degree of heat. It seems to me it would want to be regulated.

Dr. WASSALL: There is a rheostat on the wall and the current of electricity is regulated by that. The force of air is regulated by a valve.

Dr. CUSHING: The report does not state how the heating point is made, does it?

Dr. WASSALL: The nozzle of the hand-piece or the point is a porcelain tube with a coiled platinum wire embedded in it. The idea of having a nozzle of this kind arose from the fact that every other syringe made for electrical warming air had the coiled platinum situated an inch or two from the point of egress from the syringe, and the air was usually cold by the time it was delivered, unless the coil was heated red or white hot which finally heated the whole syringe uncomfortably. This instrument is the outgrowth of conversations I had with Dr. Cushing some seven or eight years ago. We discussed these objections and determined to make use of the principle used in electrical cooking apparatus. We decided that they could be overcome by a tube of porcelain which should be warmed by electrically heated wire imbedded in its walls.

Dr. W. A. JOHNSTON: There is only one fault that I can find with the apparatus of Dr. Wassall, namely, that we cannot get it. He made this one himself and I understand it is not manufactured anywhere. If some one could be persuaded to put it on the market it would be a good thing for all of us. I have been trying to get such an apparatus, but find it is out of reach. I feel satisfied that if it were put on the market it would be a popular thing.

Dr. W. H. TAGGART: I have one criticism to offer on Dr.

Wassall's apparatus. I am not satisfied in regard to the heating of it. My idea is that he does not get the full and satisfactory effects of compressed air from the apparatus that he uses, for the simple reason that he does not use a sufficient quantity of the air. He tells me that he does not use it in the trimming of roots of teeth for making crowns. If there is any place where compressed air is of decided benefit, it is there. When the blood commences to flow (the stream of compressed air going at a pressure of from twenty to thirty pounds), if the nozzle is sufficiently large, the air will blow away the blood and serum and blow back the flap of gum so completely that the root can be seen in its entire circumference. You can see down the side of the root wherever the gum has been stripped back. It goes down as though it were an invisible tool and presses the gum away with absolutely no interference from the blood. There may be blood on the mouth mirror, but the root is absolutely free from blood or anything to interfere with a direct view. With a larger stream of air, and with this given pressure of twenty-five to thirty pounds, it is an excellent thing for pushing the flabby gum back around the root of the tooth when examining it. In nearly every case I have been able to see spiculæ of bone that I could not feel with an instrument. In passing the instrument down to take off angular corners, or to remove pieces of tartar, unless we get proper hold of it with a crooked instrument, the instrument will slide over it as though it was tooth substance. The compressed air blows the gum back so thoroughly that we can see along the root of a tooth and see black spots of serumal calculus. I think high pressure and large volume of air yields us the greatest benefit.

Dr. Wassall (closing the discussion): Perhaps a word or two are required in the way of explanation. The one application that I showed to-day was the use of compressed air for a chip-blower and it was not intended to cover all of the uses to which it can be applied. In order to see the deposits in a pyorrhœa pocket use the Röntgen ray. I find it very much better.

### DR. ROBBINS' CLINIC.

Dr. Robbins: I am always ready and willing to stand by a friend, and tin and gold combined is a filling material I have always considered a friend as well as a benefactor to my patients.

Tin and gold have redeeming features that can only be appre-

ciated by those using them. You will have less cause for amalgam tests, as well as less use for amalgam after becoming accustomed to the use of tin and gold.

While I am not averse to the use of amalgam, still I use but very little of it.

I always keep tin and gold prepared in my cabinet and can fill an ordinary cavity with it in less time than it will take to prepare the amalgam and have a better filling when done. I would say this to those who wish to try it, that in making your filling, if you wish to change from tin and gold to gold, do not anneal the gold until you have the surface of the combined materials well covered with unannealed gold. If you do, you will work up a crumbly surface on the tin and gold, which will cause your filling to part at that point.

Dr. O. M. Daymude: How about the serrations of the instruments?

Dr. Robbins: I use instruments of deep serrations until finishing or until I commence using annealed gold, but would caution against condensing to the point when the plugger will cut the surface. Be sure to get the material placed well against the walls, and always keep the center of the filling a little in advance of the margin; always placing your material so as to wedge into place. If shallow serrated instruments are used you are liable to soon have a surface so dense as to prevent wedging of your filling.

Dr. Sitherwood: Would Dr. Robbins use tin and gold in the beginning of a large proximal filling in a bicuspid tooth?

Dr. Robbins: Yes, if the tooth was not so badly decayed that I would have to restore the contour.

Dr. Sitherwood: I filled teeth with tin and gold in proximal cavities of bicuspid teeth years ago, but I have not filled any in recent years. I do not like to have a patient return to me asking the cause of the blue line or discoloration.

Dr. Robbins: I do not wish to be understood to say to use tin and gold instead of gold, but prefer it to the indiscriminate use of amalgam.

### DR. HARLAN'S CLINIC.

Dr. Brophy: There is one thing that Dr. Harlan should explain, and that is the use of silver wire. I have heard him explain the advantages of it, and I think he would make that interesting if he were to say a few words.

Dr. ROHLAND: I would like Dr. Harlan also to speak of lactic acid and to explain the use of it. It has been substituted for sulphuric acid. We would like to know something about the use of lactic acid and the disadvantages, if any, of it.

Dr. HARLAN: I exhibited a tooth that had been taken from the mouth, which had on its various surfaces, crown and root, both salivary and serumal calculus. This tooth was placed in concentrated lactic acid before the audience at the beginning of this clinic. Some time later (two hours), the lactic acid was washed off, after which it was dried and submitted to those who were around the chair to show that concentrated lactic acid had no effect in a short time on either salivary or serumal calculus; but just as soon as you dilute it with water 1–10, 1–4, 1–3, with 2 or 3, 4 or 5, up to 11 per cent, it acts with more or less rapidity. After it gets above 11 per cent, it does not act with any great facility, and when it is concentrated it does not act at all because I have left teeth in it forty-eight and ninety-six hours without any softening.

Speaking of deposits on the teeth without the addition of any water, this was Merck's concentrated lactic acid.

With reference to the use of silver, in the Johns Hopkins Hospital reports for last year there will be found a reference to the cultivation of various pathogenic bacteria, which I believe is also referred to by MacFarland in his work on bacteria. The bacteria will not grow on silver plate. As soon as I learned that definitely I commenced to ligate teeth with silver suture wire. I had used it a good many times before, but not with any definite therapeutic or beneficial effect. I found in those cases where I made figure of eight loops and doubled them, fastened the ends well, that it would stay on for two or three months before it would be corroded. A gentleman in the *Dental Register* quite recently states that he has found in cases of pyorrhœa alveolaris, that in fitting a silver band around the neck of a tooth right away the tooth commenced to get better. The idea is that by using silver bands and soldering them together, driving them well down on the tooth so as to get them as close to the edge of the gum as possible without irritation in connection with the local treatment, the cases get along extremely well. So I think that perhaps from the fact these various pathogenic microörganisms will not grow on silver, we have a mechanical therapeutic agent which will be of great value.

The other points of the clinic—I do not know that there is any

necessity for discussing them—but I think it may be of interest to you to know that concentrated lactic acid injected into a pyorrhœa pocket will not dissolve the concretion on the root, and that the silver used as a ligature or as bands may give you great benefit.

With reference to chloral-camphor it is a well-known pharmacal product. You will find it in all your text-books, and although some of you know a good deal about it, you have not utilized it. There are many times when you do not wish to use cocaine solutions or other drugs that are likely to be poisonous, and you will find that if you take a pair of pointed pliers and dip it in a solution of chloral-camphor, passing it gently around the root of a tooth which is free from blood and saliva, as well as you can in a short time, an operation that is usually very painful would in some cases become entirely painless, in others almost so, and you have not a bad smelling drug in the mouth.

Dr. Newkirk: Speaking of the use of lactic acid, is it not diluted to a sufficient extent before use?

Dr. Harlan: Coming in contact with the exudation does not dilute it the same as water does.

Dr. Rohland: Does it act on the tooth?

Dr. Harlan: In this situation you make it act on the tooth deleteriously but until it is sufficiently well diluted it has no power to act on the tooth.

Dr. Cushing: Does it act out of the mouth when it is diluted?

Dr. Harlan: Yes.

Dr. Newkirk: Is it not always diluted by its practical use in the mouth?

Dr. Harlan: Not in the same way it is with water.

Dr. Cushing: You have not much doubt it will act upon the teeth?

Dr. Harlan: No.

Dr. Black: Camphor was so extremely obnoxious to me that I have refused to use it. My patients speak likewise.

Dr. Cormany: The camphor taste predominates.

Dr. Black: One word in regard to lactic acid, I have used it to separate the enamel rods and I have found it a very effective agent for that purpose. I can get good separation of the enamel rods by its use. I have used Merck's lactic acid, but I do not add water to it. I could not say it had taken up water. Lactic acid acts on the enamel, but not rapidly. It takes a great deal longer

to get good separation of the enamel rods with lactic acid than it does with a 2 per cent solution of hydrochloric acid. I have also used it for etching enamel sections that have been cut for microscopical examination, etching out the remaining substance from between the rods in order to show the enamel rods well. It does that very nicely. So I would throw out that much of a warning as to the use of lactic acid in the mouth, saying at the same time that its action is slow.

Dr. HARLAN: It was not my purpose to recommend lactic acid, but simply to disprove a very general statement that has gone through dental practice that it does remove the deposits from the roots of teeth in the concentrated form, but just as soon as you inject a ½ per cent solution of it, or drop a tooth in ½ per cent solution it attacks it with great avidity.

Dr. KOCH: Attacks what?

Dr. HARLAN: It attacks the concretion, the enamel, dentine, etc., but if it is to be used for injection into a pyorrhœa pocket for the purpose of clearing up any remnant of salivary, serumal, or sanguinary calculus which may be adherent to the root or crown, it does not do it. As soon as it comes in contact with albuminous matter it forms a coagulum, and then it ceases to be diluted, quickly and in a short time a drop injected in such a situation is neutralized or rendered inert, so to speak. I do not want you to use lactic acid; I do not think it is a good thing. I do not recommend it. I made that demonstration simply to show that it did not possess the properties that had been claimed for it.

Dr. C. R. TAYLOR: In reference to hydrate of chloral and camphor I have used it in my office for twenty years, and there are numerous cases where the hydrate of chloral and camphor, equal parts, rubbed and made in the form of a solution, can be advantageously used for extracting roots, or lancing abscesses, or it may be used in very severe cases of toothache. When you have tried everything else and failed you can often get results from this preparation that you could not obtain with anything else in toothache. It is a great anæsthetic and anodyne as well as soporific.

Dr. G. D. SITHERWOOD: I would ask Dr. Harlan if he uses trichloracetic acid simply as an escharotic in the treatment of those cases that he mentioned.

Dr. HARLAN: A 2 per cent solution of trichloracetic acid is not

a powerful escharotic. I use it for the purpose of acting as a stimulant and astringent and as a possible germicide.

If you will recall some recent literature on the subject of acetic acid, you will find in the Johns Hopkins Hospital reports that a 7 per cent solution of acetic acid was found to be more powerful than one to one thousand solution of bichloride of mercury. The addition of three parts of chlorine in the preparation of acetic acid does not render it less active as a germicide and destroyer of low forms of animal life, and consequently it may be considered in one sense a caustic. It may be used in full strength, or in 50, 40 or 30 per cent solution, or even less. One gentleman here, Dr. Dunn, has frequently used it in the mouth, as I have myself in so-called canker sore of the mouth with great benefit. A solution between 5 and 10 per cent is quite strong enough, and you will find it acts admirably. It is a powerful constringer and it will dissolve the calculus on the root of a tooth. Any one of you can drop a tooth in a 3 per cent solution and in two or three hours it will be so softened that with your fingers or thumb nail you can scrape it, and it crumbles and disintegrates. If you are going to use an acid to assist you in removing deposits which you have failed to remove, trichloracetic acid seems preferable to any of those that I have used.

Dr. Sitherwood: I am glad to hear Dr. Harlan say that because it corresponds with my own experience.

DR. ARTHUR G. SMITH'S CLINIC.

Dr. G. V. Black: I feel like saying a word about this bridge. I have put in a number of bridges practically in that way, except the beginning of the filling is made with gold. Having fitted the supports as well as possible by building up carefully and forming to them as well as I can, trying my bridge in place occasionally until I get it to lie firmly, some annealed blocks are laid on, not condensed, the bridge laid on that and the gold condensed under it by malleting upon the wire laid in the slot. The slot is broad enough to condense the next gold and weld it to that beneath, and then completing the filling over the wires that lie in the slot. It is a good many years since I made my first bridge in this way, and a number of the patients who wore these bridges are dead and have taken them to their graves with them. The bridges have done very well. The caution I would urge from my own experience is to make

the supports sufficiently strong to bear the force of mastication. I have had a few of these bend so that the tooth was out of position but still doing good service. I know of no one of these bridges that has actually failed. But I do think it is an error, although much easier to do, to put cement under these supports.

Dr. CORMANY: I would suggest that the wire should be square.

Dr. BLACK: And I would suggest still further that it be three cornered with one of the flat sides resting on the support.

Dr. CORMANY: That is right.

DR. NEWKIRK'S CLINIC.

Dr. E. H. ALLEN: I think some mention ought to be made of the instruments exhibited by Dr. Newkirk. He himself called my attention to the fact that they were made by Dr. Frank Mariner. They are beautiful and delicate instruments.

# APPENDIX.

# LIST OF OFFICERS

. . OF THE . .

# ILLINOIS STATE DENTAL SOCIETY,

FROM DATE OF ORGANIZATION.

## ORGANIZED AT CHICAGO, JULY 24, 1865.

CHAIRMAN, A. C. Van Sant, Princeton. SECRETARY, E. Honsinger, Chicago.

| Ann'l meeting. | Year. | Place. | President. | Vice-President. | Secretary. | Treasurer. | Librarian. |
|---|---|---|---|---|---|---|---|
| 1 | 1865[1] | Chicago.....1st. | A. C. Van Sant..Princeton. | E. Honsinger ...Chicago. | Edgar Park.....Chicago. | S. Babcock...Springfield. | T. N. Truesdell.....Elgin. |
| 2 | 1866 | Chicago.....2d. | H. N. Lewis.....Quincy. | O. Willson.....Aurora. | G. T. Smith...Princeton. | M. W. Sherwood.Chicago. | L. P. Haskell.....Chicago. |
| 3 | 1867 | Chicago.....3d. | Geo. H. Cushing...Chicago. | A. W. French.Springfield | M. S. Dean.....Chicago. | J. N. Crouse..Mt. Carroll. | W. W. Allport.....Chicago. |
| 4 | 1868 | Springfield.1st. | E. H. Kilbourne....Aurora. | G. P. Kingsley..Freeport. | H. J. Smith.....Quincy. | A.W. French..Springfield | M. S. Dean.....Chicago. |
| 5 | 1869 | Quincy.....1st. | M. S. Dean.....Chicago. | G.V. Black..Jacksonville. | C. S. Smith...Springfield. | A.W. French..Springfield | C. O. Dean..Mount Carroll. |
| 6 | 1870 | Bloomingt'n1st | M. S. Dean[2].....Chicago. | G.V. Black[2].Jacksonville | C. S. Smith[2]..Springfield. | A.W. French[2] Springfield | C. O. Dean[2].Mount Carroll. |
| 7 | 1871[3] | Peoria.....1st. | G. V. Black ..Jacksonville. | S. C. Wilson.Bloomington | C. S. Smith...Springfield. | G. P. Kingsley..Freeport. | E. C. Stone.....Galesburg. |
| 8 | 1872 | Chicago....4th. | O. Willson..... ...Aurora. | J. N. Crouse.....Chicago. | C. S. Smith...Springfield. | G. P. Kingsley..Freeport. | J. M. Hurtt.....Peoria. |
| 9 | 1873 | Rock Island 1st | J. N. Crouse.....Chicago. | S. L. Edwards ....Peoria. | C. R. E. Koch....Chicago. | S. M. Sturgiss....Quincy. | J. M. Hurtt.....Peoria. |
| 10 | 1874 | Jacksonville1st | C. Stoddard Smith.Spri'g'd | E. Honsinger....Chicago. | C. R. E. Koch....Chicago. | S. M. Sturgiss....Quincy. | R. Matthews.....Pontiac. |
| 11 | 1875 | Ottawa .....1st. | G. S. Miles.....Jerseyville. | E. D. Swain.....Chicago. | C. R. E. Koch....Chicago. | C. A. Kitchen. ....Galva. | F. W. Dean.....Pekin. |
| 12 | 1876 | Galesburg..1st. | E. D. Swain.....Chicago. | K. B. Davis, Petersburg. | C. R. E. Koch....Chicago. | C. A. Kitchen..Rockford. | O. Willson.....Aurora. |
| 13 | 1877 | Springfield..2d. | K. B. Davis ....Springfield. | E. C. Stone....Galesburg. | E. D. Swain.....Chicago. | C. A. Kitchen..Rockford. | E. B. David.....Aledo. |
| 14 | 1878 | Rockford...1st. | C. R. E. Koch.....Chicago. | S. M. Sturgiss....Quincy. | E. D. Swain.....Chicago. | C. A. Kitchen..Rockford. | E. B. David.....Aledo. |
| 15 | 1879 | Peoria.....2d. | S. M. Sturgiss.....Quincy. | C. A. Kitchen, Rockford. | Edmund Noyes..Chicago. | E. C. Stone....Galesburg. | W. W. Ormsbee....Geneva. |
| 16 | 1880 | Bloomington2d | C. A. Kitchen....Rockford. | J. Frank Mariner, Ottawa | Edmund Noyes..Chicago. | E. C. Stone....Galesburg. | G. H. Harrington..Delavan. |
| 17 | 1881 | Rock Island 2d | J. Frank Mariner..Ottawa. | J. A. W. Davis, Galesburg | Edmund Noyes..Chicago. | E. C. Stone....Galesburg. | G. H. Harrington..Delavan. |
| 18 | 1882 | Quincy.....2d. | A. W. Harlan.....Chicago. | W. T. Magill, Rock Island | Edmund Noyes..Chicago. | E. C. Stone....Galesburg. | H. H. Townsend...Pontiac. |
| 19 | 1883 | Decatur.....1st. | E. C. Stone.....Galesburg. | J. J. R. Patrick, Belleville | Edmund Noyes..Chicago. | E. S. Talbot.....Chicago. | H. H. Townsend...Pontiac. |
| 20 | 1884 | Springfield..3d. | Edmund Noyes...Chicago. | H. H. Townsend, Pontiac | J. W. Wassall[4]..Chicago. | J. Campbell..Blooming'n | W. B. Woodward....Peoria. |
| 21 | 1885 | Peoria.....3d. | H. H. Townsend...Pontiac. | M. H. Patten, Springfield | J. W. Wassall[5]..Chicago. | C. R. Dwight....Danville. | J. W. Cormany..Mt. Carroll. |
| 22 | 1886 | Rock Island 3d. | T. L. Gilmer.....Quincy. | W. B. Woodward, Peoria. | J. W. Wassall[6]..Chicago. | C. B. Rohland.....Alton. | W. B. Ames.....Chicago. |
| 23 | 1887 | Jacksonville.2d | W. T. Magill..Rock Island. | C. B. Rohland .....Alton. | J. W. Wassall[7]..Chicago. | T. W. Prichett.Whitehall | W. B. Ames.....Chicago. |
| 24 | 1888 | Cairo.....1st. | C. B. Rohland.....Alton. | Chas. Henry, Jackson'lle. | Garrett Newkirk.Chicago | T. W. Prichett.Whitehall | W. B. Ames.....Chicago. |
| 25 | 1889 | Quincy.....3d. | Geo. H. Cushing...Chicago. | J. J. Jennelle.....Cairo. | Garrett Newkirk.Chicago | T. W. Prichett.Whitehall | W. B. Ames.....Chicago. |
| 26 | 1890 | Springfield.4th. | T. W. Prichett..Whitehall. | Kate C. Moody, Mendota. | Garrett Newkirk.Chicago | W. A. Stevens...Chicago. | D. M. Cattell.....Chicago. |
| 27 | 1891 | Bloomington3d | Truman W. Brophy.Chicago | E. K. Blair.....Waverly. | Garrett Newkirk.Chicago | W. A. Stevens...Chicago. | F. H. McIntosh..Bloom'g'n |
| 28 | 1892 | Springfield.5th. | W. H. Taggart...Freeport. | Garrett Newkirk.Chicago | Louis Ottofy.....Chicago. | W. A. Stevens...Chicago. | F. H. McIntosh..Bloom'g'n |

[1] Two meetings were held in Chicago, July and November; all succeeding meetings were held in May.
[2] These officers held over from the previous meeting, no election being held at the close of meeting of 1869.
[3] The officers acting at this and succeeding meetings were elected and installed at the close of the previous meeting.
[4] Assistant Secretary, W. H. Taggart, Freeport.
[5] Assistant Secretary, P. J. Kester, Chicago.
[6] Assistant Secretary, P. J. Kester, Chicago.
[7] Assistant Secretary, Louis Ottofy, Chicago.

## LIST OF OFFICERS OF THE ILLINOIS STATE DENTAL SOCIETY.—Continued.

| Ann'l meeting. | Year. | Place. | President. | Vice-President. | Secretary. | Treasurer. | Librarian. |
|---|---|---|---|---|---|---|---|
| 29 | 1893 | Rock Isl'd..4th | E. K. Blair.....Waverly. | C. N. Johnson...Chicago. | Louis Ottofy....Chicago. | W. A. Stevens...Chicago. | F. H. McIntosh, Bloom'g'n |
| 30 | 1894 | Springfield..6th | Garrett Newkirk..Chicago. | J.W.Cormany.Mt.Carroll | Louis Ottofy....Chicago. | W. A. Stevens...Chicago. | F. H. McIntosh, Bloom'g'n |
| 31 | 1895 | Galesburg ...2d | J. W. Cormany.Mt. Carroll. | S. F. Duncan.....Joliet. | Louis Ottofy....Chicago. | W. A. Stevens...Chicago. | Grafton Munroe, Spring'ld |
| 32 | 1896 | Springfield..7th | W. A. Stevens ...Chicago. | C. R. Taylor....Streator. | Louis Ottofy....Chicago. | E. D Swain ....Chicago. | J. R. Rayburn...Fairbury. |
| 33 | 1897 | Peoria .....4th | C. R. Taylor.....Streator. | E. B. David.....Aledo. | Louis Ottofy....Chicago. | E. D. Swain ....Chicago. | J. R. Rayburn...Fairbury. |
| 34 | 1898 | | | | | | |
| 35 | 1899 | | | | | | |
| 36 | 1900 | | | | | | |
| 37 | 1901 | | | | | | |
| 38 | 1902 | | | | | | |
| 39 | 1903 | | | | | | |
| 40 | 1904 | | | | | | |
| 41 | 1905 | | | | | | |
| 42 | 1906 | | | | | | |
| 43 | 1907 | | | | | | |
| 44 | 1908 | | | | | | |
| 45 | 1909 | | | | | | |
| 46 | 1910 | | | | | | |
| 47 | 1911 | | | | | | |
| 48 | 1912 | | | | | | |
| 49 | 1913 | | | | | | |
| 50 | 1914 | | | | | | |
| 51 | 1915 | | | | | | |
| 52 | 1916 | | | | | | |
| 53 | 1917 | | | | | | |
| 54 | 1918 | | | | | | |
| 55 | 1919 | | | | | | |
| 56 | 1920 | | | | | | |
| 57 | 1921 | | | | | | |
| 58 | 1922 | | | | | | |
| 59 | 1923 | | | | | | |
| 60 | 1924 | | | | | | |
| 61 | 1925 | | | | | | |
| 62 | 1926 | | | | | | |
| 63 | 1927 | | | | | | |
| 64 | 1928 | | | | | | |
| 65 | 1929 | | | | | | |
| 66 | 1930 | | | | | | |
| 67 | 1931 | | | | | | |
| 68 | 1932 | | | | | | |
| 69 | 1933 | | | | | | |

# OFFICERS AND STANDING COMMITTEES.

## OFFICERS, 1896-97.

President, C. R. Taylor.....Streator.
Vice President, E. B. David.....Aledo.
Secretary, Louis Ottofy.....Chicago.
Treasurer, E. D. Swain.....Chicago.
Librarian, J. R. Rayburn.....Fairbury.

## EXECUTIVE COUNCIL, 1896-97.

*Ex Officio*.....
- C. R. Taylor, Streator.
- Louis Ottofy, Chicago.
- E. D. Swain, Chicago.

Terms expire 1897.....
- Geo. H. Cushing, Chicago.
- E. H. Allen, Freeport.
- A. S. Waltz, Decatur.

Terms expire 1898.....
- E. B. David, Aledo.
- Edmund Noyes, Chicago.
- Robert Goebel, Lincoln.

Terms expire 1899.....
- A. H. Peck, Chicago.
- R. N. Laurance, Lincoln.
- L. W. Skidmore, Moline.

# STANDING COMMITTEE.

## EXECUTIVE COMMITTEE.

J. G. Reid.....Chicago.

## COMMITTEE ON PUBLICATION.

Louis Ottofy, Chairman.....Chicago.
A. W. Harlan.....Chicago.
E. Noyes.....Chicago.

## BOARD OF EXAMINERS.

T. W. Prichett, (term expires 1897).....Whitehall.
E. D. Swain, " " 1898).....Chicago.
C. B. Rohland, " " 1899).....Alton.

## COMMITTEE ON DENTAL SCIENCE AND LITERATURE.

A. W. Harlan.....Chicago.

## COMMITTEE ON DENTAL ART AND INVENTION.

J. E. Keefe.....Chicago.

## COMMITTEE ON INFRACTIONS OF THE CODE OF ETHICS.

C. R. E. Koch.....Chicago.
D. E. Coulson.....Galesburg.
W. E. Holland.....Jerseyville.

## CLINICS.

T. W. Prichett, Supervisor.....Whitehall.
Garrett Newkirk, Assistant.....Chicago.
B. Newsome, Assistant.....Minonk.

## LOCAL COMMITTEE OF ARRANGEMENTS.

W. A. Johnston.....Peoria.
Arthur G. Smith.....Peoria.

# CONSTITUTION AND BY-LAWS.

## ARTICLE I.

### Name.

This Society shall be called "The Illinois State Dental Society."

## ARTICLE II.

### Aims and Objects.

Its aims and objects are as follows: The elevation of the standard of professional education; the advancement and cultivation of dental science and literature, and the protection of the public from the evils of empiricism; the promotion of the honor, usefulness and interest of the dental profession and mutual fellowship and good feeling.

## ARTICLE III.

### Officers.

The officers of this Society shall consist of a President, Vice President, Secretary, Treasurer and Librarian, and such others as may be designated in the by-laws or standing resolutions.

## ARTICLE IV.

### Executive Council.

The management of this Society shall be vested in an Executive Council consisting of twelve active members of whom the President, Secretary and Treasurer shall constitute a part, and these shall be the officers of the Council.

## ARTICLE V.

### Duties of Executive Council—Election of President and Vice President. Appointment of all Other Officers, and Selecting Place of Next Meeting.

The Executive Council shall have exclusive control of all the business of the Society and their action shall be final, without review by the Society, except as otherwise provided.

At the morning session of the last day of the annual meeting the Society shall proceed to elect a President and Vice President by ballot. The first ballot shall be informal, and in no case shall a ballot be dispensed with.

The Council shall appoint or elect all other officers, and standing committees, and shall select the place of annual meeting. In case of the absence from the meeting of the President and Vice President or of any other officers, the Council shall appoint others to act in their places.

## ARTICLE VI.

### Election of Executive Council.

At the first election of the Executive Council held under the amended constitution, nine members shall be elected, who shall serve—three for one year—three for two years—and three for three years—their terms to be decided by lot after their election. At each subsequent annual meeting three members of the Council shall be elected by the Society to serve for three years.

## ARTICLE VII.

### Quorum.

Seven members of the Executive Council shall be necessary to constitute a quorum. If at any annual meeting a quorum should fail to be present, the members of the Council present shall appoint enough members of the Society to constitute with themselves a quorum, who shall serve until the arrival of the regular members of the Council.

## ARTICLE VIII.

### Members.

Section 1.—This Society shall consist of Active, Corresponding and Honorary Members.

### Active Members.

Sec. 2.—The Active members shall consist of practitioners of dentistry residing in the State of Illinois (except as provided in Section 5, Article VII, of the By-Laws). They shall be twenty-one years of age, of good moral character, and shall have received a diploma from a respectable Medical or Dental College, or shall have been engaged three years in the practice of dentistry, including term of pupilage, and shall have passed a satisfactory examination before the Board of Examiners.

### Corresponding Members.

Sec. 3.—Corresponding Members shall consist of practitioners of dentistry or medicine residing in this or other States of the Union, or in foreign countries, who manifest a disposition to advance the science and art of the profession by contributing to its literature.

### Honorary Members.

Sec. 4.—Honorary Members shall consist of persons who have made valuable contributions to the science or art of dentistry, or have rendered important services to the profession.

## ARTICLE IX.

### Powers.

The Society shall use one common seal, with such device and inscription as it shall agree upon; and may, by vote of the Council, grant to its members such certificates as may authenticate their membership.

### ARTICLE X.

#### Amendments.

The Constitution may be altered or amended, with the consent of two-thirds of the members of the Society present—the proposition stating the amendment (in writing) to be submitted by five members at an annual meeting and to lie over until the next annual meeting.

If the purpose and scope of such alterations or amendments be announced in writing at the annual meeting, or, if a general revision is desired to be made, and the society, or its executive council, shall appoint a committee to determine the details of such amendments, or to make such revision, the publication in the "Transactions" of such changes as are proposed to be made, or of such revised constitution, shall be deemed a sufficient compliance with the requirements of this section, and such proposed alterations, amendments, or revision, may be adopted or rejected at the next annual meeting thereafter.

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## BY-LAWS.

### ARTICLE I.

#### OFFICERS.

#### Duties of the President.

Section 1.—The President shall preside at all meetings of the Society and Council, call special meetings of the Society at the request of ten active members, and of the Council at the request of three of its members; sign all diplomas, certificates, or letters testimonial; appoint all committees not otherwise provided for, and be *ex officio* a member of all standing committees.

#### Duties of the Vice President.

Sec. 2.—The Vice President shall, in the absence of the President, preside; and in case of the absence of both of these officers, a President *pro tempore*, shall be appointed by the Council.

#### Duties of the Secretary.

Sec. 3.—The Secretary shall keep minutes of all meetings, both of the Council and Society; notify officers and members of their election; give notice to members of all meetings; sign all diplomas, certificates and letters testimonial; receive all moneys due the Society from its members, and pay the same to the Treasurer, and certify to all official acts of the Society in connection with the President. He shall take charge of and conduct the correspondence of the Society, and shall keep a copy of all official letters he may write, with replies to the same. He shall be Chairman of the Publication Committee, and shall give a bond in amount as required by the Executive Council before entering upon his duties.

#### Duties of the Treasurer.

Sec. 4.—It shall be the duty of the Treasurer to keep all moneys of the Society committed to his trust; to pay them over by order of the President, countersigned by the Secretary, and keep a correct account of the same in a book pro-

vided for that purpose. He shall make a full and detailed report of the financial affairs of the Society at the annual meeting each year; and at the expiration of his term of office, he shall deliver to his successor all funds, papers and books relating thereto, and shall give bond in amount as required by the Executive Council before entering upon his duties.

### Duties of the Librarian.

Sec. 5.—The Librarian shall have charge of all books and manuscripts belonging to the Society. He shall keep an accurate catalogue of the same, and shall report at the annual meeting the condition of the Library, and contributions made to it during the year.

### Publication Committee.

Sec. 6.—The President shall appoint annually, after the election of officers, two members of the Society, who shall act in conjunction with the Secretary, as the Publication Committee.

They shall be authorized to employ a competent reporter to furnish an accurate report of the proceedings of each meeting.

They shall superintend the publication and distribution of such portions of the Transactions as the Council may direct, or the committee judge to be of sufficient value, and shall have full authority and power to cut down, amend or leave out such matter as they deem best for the proper preparation of the Transactions for publication.

They shall specify, in their annual report, the character and cost of the publications of the Society during the year, and the number of copies still on hand. Any report or other paper entitled to publication in the volume of the Transactions for the year in which it shall be presented to the Society must be placed in the hands of the Publication Committee on or before the last day of the annual meeting, and must be also so prepared that the proof sheets furnished the authors shall be returned without material alteration or addition.

Every paper received by this Society, and all plates and other means of illustration, shall be considered the exclusive property of the Society, and shall be published for its benefit.

### Disclaimer.

This committee is hereby instructed to print, at the beginning of each volume of the Transactions, the following disclaimer, *viz.*; "The Illinois State Dental Society, although formally accepting and publishing the reports of the various committees, and the essays read before it, holds itself wholly irresponsible for the opinions, theories, or criticisms therein contained, except when otherwise decided by special resolution."

## ARTICLE II.

### Election of the Executive Council.

At the election held first after the adoption of this amended Constitution, nine persons shall be chosen by the Society for members of the Executive Council, to serve for terms of one, two and three years respectively, or until their successors are duly qualified, and thereafter three members shall be elected annually to serve three years.

They shall be nominated with special reference to their fitness by a committee of three, to be appointed by the President, and only confirmed by a two-thirds affirmative vote of the members of the Society present.

The election of new members of the Council annually shall be held on the morning of the last day's session, but those newly elected shall only enter upon their duties after the close of the annual meeting at which they were elected.

## ARTICLE III.

### Duties of Executive Council.

The Executive Council shall have the absolute control of the entire business of the Society—and shall sit with closed doors.

### How Business Shall be Brought Before the Council.

Any member of the Society desiring to bring any matter of business before the Council must do so in writing, and may appear before them to advocate any such measure by consent of the Council.

### Whom They Shall Elect and Appoint.

They shall annually elect a Secretary, Treasurer and Librarian and appoint the Executive Committee, one member of the Board of Examiners, a Committee of three on Ethics, a Supervisor of Clinics, the Committee on Dental Science and Literature, the Committee on Dental Art and Invention and a Local Committee of Arrangements.

### Officers and Members of Old Committees to Hold Over.

The officers of the Society and the members of the Executive Committee, of the Board of Examiners and of the Committee on Dental Science and Literature and of Dental Art and Invention who are in office at the time this constitution goes into effect shall continue in office till their full terms expire.

### Auditing Committee.

The Executive Council shall annually appoint an Auditing Committee from their own number.

### How Moneys Shall be Voted.

They shall vote no moneys to be paid for other than the legitimate expenses of the Society except upon a three-fourths vote of all the members of the Council present.

### Presiding Officer not to Vote Except in Case of a Tie.

The presiding officer of the Council shall not vote on any question, except in case of a tie, when he shall cast the deciding vote.

## ARTICLE IV.

### Executive Committee, and Duties of same.

There shall be an Executive Committee of one to be appointed by the Executive Council annually, whose duty shall be to provide a suitable hall for meetings and prepare the program of scientific work and order of business for each annual session, and attend to such other business as the Council may direct.

## ARTICLE V.

### Duties of Board of Examiners.

The Board of Examiners shall satisfy themselves by examination, or in any other manner they may think necessary, of the reputable character and professional qualifications of all candidates for membership, and recommend for election such as they find to be worthy.

## ARTICLE VI.

### Vacancies in the Board of Examiners.

In case of the absence from any meeting of one or more members of the Board of Examiners, the Council shall appoint substitutes to act *pro tempore*, and in case of a vacancy, occurring by death or otherwise, they shall, at the earliest time practicable thereafter, appoint some member to fill the unexpired term of such vacating member.

## ARTICLE VII.

### Election of Members.

Section 1.—Candidates for membership must be proposed to the Board of Examiners, recommendations for the same being made in writing by two members of the Society, accompanied by the initiation fee, said fee being returnable to the applicant in case of rejection. The Board shall proceed to examine such candidates in accordance with the provisions of Article V. of these By-Laws, as early thereafter as practicable. Three-fourths of all the votes cast by the Council shall be necessary for the election of a member.

Sec. 2.—No person shall be entitled to the privileges of active membership until he shall have signed the Constitution and paid the initiation fees and dues. If he omit the same for one year his election shall be void.

Sec. 3.—No person having once been a member of this Society who has forfeited his membership by the nonpayment of his dues, shall be eligible to reëlection until the amount due from him at the time he was dropped be paid.

The names of all candidates recommended by the Board of Examiners for active membership shall be posted conspicuously in the room where the Society meets, and shall not be voted on until the daily session of the Council next following the posting.

Any member of the Society knowing of any reason why a candidate for membership should be rejected, shall notify the Board of Examiners and the Council through its presiding officer, in writing of such reasons.

Any candidate for membership who has once been voted upon and rejected, shall not have his name proposed again until the next annual meeting.

### Corresponding and Honorary Members—How Elected.

Sec. 4.—The names of candidates for Corresponding or Honorary membership shall be presented to the Board of Examiners only upon the recommendation of ten active members.

The Board shall recommend them for election only after satisfying themselves that they have the qualifications provided for in Secs. 3 and 4, Article VIII.

of the Constitution ; and such names shall upon no occasion be presented to the Council, except by the Board of Examiners, who shall, in reporting names for Corresponding or Honorary membership, state what work the candidates have done entitling them to be so presented.

If any Corresponding member shall enter upon the practice of dentistry in this State, his corresponding membership shall thereupon cease.

Active Members Removing from the State.

Sec 5.—Active members removed from the State may retain their membership by notifying the Secretary of their desire to be placed upon a list of non-resident members, and by regularly paying an annual fee of one dollar. Those having lost their membership by removal, if still in reputable practice, may be elected non-resident members.

## ARTICLE VIII.

Initiation Fee and Annual Dues.

Section 1.—The initiation fee shall be five dollars. The annual dues shall be five dollars, payable in advance, on the morning of the first day's session of the annual meeting. No member shall be entitled to the privileges of the floor until his dues are paid. Any member who neglects to pay his annual dues two successive years, shall cease to be a member without action of the Society, *provided* the Secretary has notified him of his indebtedness.

What Members are or may be Exempt from Dues.

Corresponding and Honorary members shall be exempt from the payment of all dues; and as a mark of honor for distinguished services in the profession, by special action of the Society, the dues of an active member may be remitted. An active member having paid annual dues for twenty-five consecutive years, shall be constituted a life member, and shall be exempt from payment of dues.

## ARTICLE IX.

Duties and Privileges of Members.

Section 1.—An active member shall not accept a student for a less period than three years, and shall require each student to give a written obligation to graduate at some regularly organized dental college before he assumes the responsibilities of a dental practitioner.

Sec. 2.—Active members shall be entitled to debate and vote on all questions discussed in the Society, and eligible to any office in its gift, provided their dues are fully paid.

Sec. 3.--Corresponding and Honorary members shall be entitled to a seat in meetings of the Society, and have the privilege of debating all questions of a professional or scientific character.

## ARTICLE X.

Resignation or Expulsion of Members.

Section 1.—Any member shall have leave to resign (except in cases of impeachment), upon application made therefor in writing; *provided* all arrears due from him to the Society have been discharged.

Sec. 2.—Any member may be impeached by three members, for violating the laws of this Society, for malpractice, or other gross misconduct. All charges shall be made in writing with specifications, clearly setting forth each violation of the code of ethics governing this body. The member so impeached shall have transmitted to him a written copy of the impeachment, with notice of the time of hearing, before a committee of five members appointed for that purpose; then if the report of said committee sustain such impeachment, the Council, at the next regular meeting, may, by ballot, suspend or expel such member, by a majority of three-fourths of all the votes cast.

### Committee on Ethics.

Sec. 3.—There shall be appointed annually, by the Executive Council, a Committee on Ethics, to consist of three members, to whom all complaints shall be submitted, and through whom alone shall cases of infractions of the code be brought before the Council.

## ARTICLE XI.

No member shall speak on any question unless his dues are paid, and until his name has been announced by the presiding officer, nor shall any one speak more than twice upon one subject, nor to exceed fifteen minutes in all, unless by affirmative vote of the Society.

## ARTICLE XII.

### Annual Meetings.

Section 1.—The annual meeting shall be held in May, commencing on the second Tuesday at 10 o'clock A. M., and shall be devoted to the reading and discussion of papers and such other business as shall relate to the interests of the profession, concluding with the election of officers during the last daily session. Ten active members shall be necessary to constitute a quorum for the transaction of business at any meeting of this Society.

The Executive Council shall meet at 9 o'clock A. M., preceding the meeting of the Society, and shall hold a session before each daily session of the Society if necessary. They may be called together at any time during the year by the President, upon the request of three members of the Council.

Sec. 2.—None but members of this Society shall be present during elections; *provided* an active member of the Society calls for the enforcement of this section.

Sec. 3.—It shall be the duty of the Society at each regular meeting, to appoint one of its members to deliver an address at the next regular meeting.

## ARTICLE XIII.

### Alterations or Amendments.

Section 1.—These By-Laws may be altered or amended at any regular meeting by a vote of two-thirds of the members of the Society present, *provided* said alteration or amendment shall have been presented at a previous meeting.

If the purpose and scope of such alterations or amendments be announced in writing at the annual meeting, or, if a general revision is desired to be made, and

the society, or its executive council, shall appoint a committee to determine the details of such amendments, or to make such revision, the publication in the "Transactions" of such changes as are proposed to be made, or of such revised By-Laws, shall be deemed a sufficient compliance with the requirements of this section, and such proposed alterations, amendments, or revision, may be adopted or rejected at the next annual meeting thereafter.

## ARTICLE XIV.

### Rules of Order.

Robert's Rules of Order shall be the Code of this Society.

## ARTICLE XV.

This Constitution shall go into effect immediately upon its adoption, and it shall be the duty of the presiding officer at once to appoint a Nominating Committee, as provided in Article II. of the By-Laws, and said committee shall as soon thereafter as possible present the names of the Executive Council, and the vote be then immediately taken.

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## STANDING RESOLUTIONS.

### Supervisor of Clinics.

*Resolved*, That a Supervisor of Clinics shall be appointed annually by the Executive Council to serve one year.

The duties of such Supervisor shall be to make all arrangements for the holding of clinics, to have charge of the clinic rooms, fixtures, etc., and to determine who may or may not operate, what operations shall be performed, etc., etc. He shall keep a record of all operations in a book provided for that purpose, and shall report to the Society annually at the second daily session after the holding of the clinics.

His report shall contain as thorough a criticism of each operation as possible, setting forth all the steps he may have deemed incorrect or otherwise, a statement of what he would have thought a better method, and his reasons therefor—to the end that profitable and instructive discussion may follow. He shall also report, as far as possible, the condition of operations made at the clinics of previous years.

He may appoint one or more assistants, as may be required.

He shall notify each clinical operator to supply himself with all needed instruments and appliances for the proper performance of his operations, and request him to select for himself an assistant.

Alternates shall also be selected and notified.

### Duties of Librarian.

*Resolved*, That after this date (May 1885), it shall be the duty of the Librarian to obtain cabinet photographs, so far as possible, of all the members of this Society deceased, and likewise of the present members, and to properly arrange the

same in suitable albums to be procured by him; and the photographs of future members shall be added to the collection.

The Librarian shall be the custodian of these albums, and shall bring them to each annual meeting for the inspection of the members.

*Resolved*, That the following Committees be created:

COMMITTEE ON DENTAL SCIENCE AND LITERATURE.

First, a Committee consisting of one member on Dental Science and Literature, whose duty it shall be to report annually, on the first day of the annual meeting, on the progress of science and literature as appertaining to dentistry and give a resumé of all that may be new and important.

COMMITTEE ON DENTAL ART AND INVENTION.

Second, a Committee consisting of one member on Dental Art and Invention, whose duty shall be to report on the first day of each annual meeting, the advance made during the year in the arts and inventions appertaining to dentistry. This Committee shall exhibit the new devices and methods pertaining to the practice of dentistry, which are brought before the Society, in a room specially provided for that purpose.

The member of this committee shall be selected with reference to his special fitness for those duties, and be appointed by the Council.

The term of office shall be one year.

DISTRIBUTION OF TRANSACTIONS.

*Resolved*, That the official transactions shall not be supplied to members in arrears for annual dues; but it shall be the duty of the Secretary to notify all delinquents of this action previous to the publication of the transactions.

*Resolved*, That the members of the Publication Committee shall have the power to make such arrangements as in their judgment they deem proper looking toward the publication of the transactions for the succeeding year.

## CODE OF ETHICS.

### ARTICLE I.

SECTION 1. The dentist should be ever ready to respond to the reasonable wants of his patrons, and should fully recognize the obligations involved in his duties toward them. As, in many cases, they are unable to comprehend the operation or service performed, or to correctly estimate its value, the practitioner must be guided by his own sense of right, in treating the case as his superior knowledge dictates. His manner should be gentle and sympathetic, and yet sufficiently firm to enable him to secure the best results of his skill. He should gain the confidence of his patrons, not alone by the skillful performance of difficult operations, but also by attending carefully and conscientiously to the simpler cases committed to his care.

SEC. 2. The dentist, without being obtrusive or pedantic, should impart such information to his patrons as his opportunities afford him in regard to the causes and nature of the disease in the teeth, or adjacent parts, which he may be called upon to treat; and should explain to them the importance of availing them-

selves of such timely preventives or remedies as he may deem necessary to their welfare. He should also communicate such general information as shall enable them to exercise an intelligent appreciation of what the profession aims to accomplish.

Sec. 3. The dentist shall be temperate in all things, keeping both mind and body in the best possible health, that his patients may have the benefit of that clearness of judgment and skill which they have a right to expect.

## ARTICLE II.

Section 1. Every member of the dental profession is bound, as such, to maintain the honor and integrity of the profession. To this end, he should himself be upright and courteous in his intercourse with the public and his brethren in the profession.

Sec. 2. It is unprofessional to resort to public advertisements, such as cards, handbills, posters or signs calling attention to peculiar styles of work, prices for services, special modes of operating, or to claim superiority over neighboring practitioners; to publish reports of cases, or certificates in the public prints; to go from house to house soliciting or performing operations; to circulate or recommend nostrums, or to perform any other similar acts. But nothing in this section shall be so construed as to imply that it is unprofessional for dentists to announce in the public prints, or by card, simply their names, occupation, and place of business; or in the same manner to announce their removal, absence from, or return to business; or to issue, to their patients appointment cards, with a fee bill for professional services thereon.

Sec. 3. The dentist, when applied to, for merely advice or temporary relief, by the patient of a reputable practitioner, whose services at that time he is unable to procure, should guard against disparaging the family dentist by hints, inquiries, or any other means calculated to weaken the patient's confidence in him. At the same time the dentist should not, from too high a sense of professional courtesy to his neighboring practitioner, allow the interests of persons so applying for counsel or service, to be jeopardized.

Sec. 4 And it shall be regarded as unprofessional to warrant operations or work as an inducement to patronage.

## ACTIVE MEMBERS, 1896.

| NAME. | ADDRESS. | ELECTED. |
|---|---|---|
| ALLEN, E. H.* | Freeport | 1883 |
| AMES, W. V-B.* | 34 Washington St., Chicago | 1884 |
| ANTES, R. H | Geneseo | 1873 |
| BAKER, HESTER J.* | Quincy | 1894 |
| BANES, J. D. | 70 State St., Chicago | 1891 |
| BARCUS, J. M.* | Carlinville | 1889 |
| BARNETT, H. K.* | Jerseyville | 1896 |
| BECKWITH, T. W | Sterling | 1881 |
| BENTLEY, C. E.* | 100 State St., Chicago | 1895 |
| BLACK, G. V.* *Life Member* | Jacksonville | 1868 |
| BLAIR, E. K.* | Waverly | 1887 |
| BRIGHAM, E. T.* | Watseka | 1889 |
| BROADBENT, T. A | 34 Washington St., Chicago | 1895 |
| BROPHY, T. W.* | 126 State St., Chicago | 1876 |
| BROWN, A. E | 1911 Michigan Ave., Chicago | 1882 |
| BROWN, J. B.* | Bloomington | 1892 |
| BROWN, J. ROY | Quincy | 1895 |
| BULL, H. B.* | Fairbury | 1892 |
| CAMPBELL, J* | Bloomington | 1875 |
| CAMPBELL, S. A | Mattoon | 1886 |
| CARPENTER, E. R* | 18 Van Buren St., Chicago | 1895 |
| CASE, C. S | 126 State St., Chicago | 1894 |
| CATTELL, D. M.* | 34 Monroe St., Chicago | 1889 |
| CHAPMAN, W. C.* | Gibson City | 1895 |
| CHILDS, T. S | Decatur | 1894 |
| CIGRAND, B J.* | 475 West North Ave., Chicago | 1893 |
| CIGRAND, P. J.* | 718 South Halsted St., Chicago | 1896 |
| CLARK, A. B.* | 34 Washington St., Chicago | 1876 |
| CLUSMANN, L | 360 Blue Island Ave., Chicago | 1892 |
| COLLINS, J. W.* | Lincoln | 1883 |
| CONKEY, F. M * | Homer | 1895 |
| COOK, GEO. W | 131 53d St., Chicago | 1894 |
| CORBETT, C. C.* | Edwardsville | 1892 |
| CORMANY, J. W.* | Mt. Carroll | 1878 |
| CORWIN, J | 737 Madison St., Chicago | 1895 |
| COSTNER, H. A.* | 5 43d St., Chicago | 1892 |
| COULSON, D. E.* | Galesburg | 1890 |
| CRISSMAN, IRA B | 271 N. Clark St.. Chicago | 1890 |

*Present.

| NAME. | ADDRESS. | ELECTED. |
|---|---|---|
| CROUSE, J. N., *Life Member* | 2231 Prairie Ave., Chicago | 1865 |
| CUMMINS, J. T | Metropolis City | 1888 |
| CURRY, A. J.* | Streator. | 1892 |
| CUSHING, G. H.* *Life Member* | 31 Washington St., Chicago | 1865 |
| DAVID, E. B.* | Aledo | 1873 |
| DAVID, G. L.* | Aledo | 1896 |
| DAVIS, J. A. W.. *Life Member* | Galesburg | 1872 |
| DAVIS, K. B.* *Life Member* | Springfield | 1869 |
| DAVIS, L. L.* | 103 State St., Chicago | 1885 |
| DAYAN, L. F | Masonic Temple, Chicago | 1885 |
| DAYMUDE, O. M.* | Monmouth | 1893 |
| DENNIS, G. J.* | 257 31st St., Chicago | 1890 |
| DILLON, G. B | Sterling | 1886 |
| DORN, C. P | Naperville | 1880 |
| DUNCAN, E.* | Jacksonville | 1877 |
| DUNCAN, S. F.* | Joliet | 1881 |
| DUNN, J. AUSTIN * | 31 Washington St., Chicago | 1887 |
| EILES F. STANLEY | Blue Island | 1893 |
| ENTSMINGER, G. W | Carbondale | 1888 |
| EVEY, D. H | Monmouth | 1894 |
| FISCHER, VINCENT | 570 Blue Island Ave., Chicago | 1892 |
| FISHBURN, J. M | El Paso | 1884 |
| FISHER, J. W.* | Bloomington | 1876 |
| FREEMAN, A. B | 580 W. Madison St., Chicago | 1889 |
| FREEMAN, A. W., *Life Member* | 34 Washington St., Chicago | 1865 |
| FREEMAN, D. B., *Life Member* | 4000 Drexel Boulevard, Chicago | 1872 |
| FREEMAN. I. A | 100 State St., Chicago | 1885 |
| GALLIE, DON M | 161 West Madison St., Chicago | 1894 |
| GARDINER, F. H | 31 Washington St., Chicago | 1877 |
| GILMER, A. L.* | Quincy | 1895 |
| GILMER, THOS. L.* *Life Member* | 126 State St., Chicago | 1872 |
| GLUESING, J. W.* | Moline | 1893 |
| GOEBEL, ROBERT* | Lincoln | 1884 |
| GORDON, BYRON | Moline | 1893 |
| GREEN, W. F | South Evanston | 1892 |
| GUFFIN, E. L., *Life Member* | Geneseo | 1882 |
| GUNTHER, H. ALFRED | 3300 Cottage Grove Ave., Chicago | 1892 |
| HANAFORD, M. L | Rockford | 1878 |
| HARLAN, A. W.,* *Life Member* | Masonic Temple. Chicago | 1872 |
| HARPER, W. E | 3456 Wabash Ave., Chicago | 1893 |
| HARRIS, A. J | 279 Warren Ave., Chicago | 1886 |
| HEBERT, A. W | 31 Washington St., Chicago | 1894 |
| HENDERSON, G. H.* | Springfield | 1896 |
| HENDERSON, L. D* | Evanston | 1896 |
| HENRY, T. F.* | Streator | 1896 |

*Present.

| Name. | Address. | Elected. |
|---|---|---|
| Hewes, C. T.* | Quincy | 1896 |
| Hilton, John | Freeport | 1893 |
| Hinkins, J. E * | 131 53d St,, Chicago | 1888 |
| Holland, W. E.* | Jerseyville | 1889 |
| Honsinger, E., *Life Member* | 318 Park Ave., Chicago | 1865 |
| Howe, A. O | 70 State St., Chicago | 1891 |
| Hunter, H. L.* | Clinton | 1892 |
| James, Austin F.* | Oak Park | 1895 |
| James, Chas. W. | Oak Park | 1894 |
| Jennelle, J. J. | Cairo | 1887 |
| Johnson, C. N.* | 31 Washington St.. Chicago | 1886 |
| Johnston, W. A.* | Peoria | 1891 |
| Kane, J. K.* | Pinckneyville | 1896 |
| Keefe, J. E.* | 34 Washington St., Chicago | 1888 |
| Kester, P. J.* | 126 State St., Chicago | 1882 |
| Kitchen, C. A., *Life Member* | Rockford | 1865 |
| Koch, C. R. E.,* *Life Member* | 213 31st St., Chicago | 1867 |
| Lakin, S. W.* | Eureka | 1895 |
| Lamereaux, J. M | Galesburg | 1895 |
| Laurance, R. N.* | Lincoln | 1879 |
| Leake, C. W | 2454 Indiana Ave., Chicago | 1894 |
| Lumpkin, I. A | Mattoon | 1886 |
| Mabee, W. E | Galesburg | 1895 |
| Magill, W. T., * *Life Member* | Rock Island | 1871 |
| Mariner, J. Frank, *Life Member* | 31 Washington St., Chicago | 1872 |
| Marshall, J. S | 34 Washington St., Chicage | 1883 |
| Martin, W. C | Peoria | 1881 |
| Matteson, A. E., *Life Member* | 3700 Cottage Grove Ave., Chicago | 1869 |
| Matteson, C. F., *Life Member* | 50 35th St., Chicago | 1872 |
| Matthews, J. H | Galesburg | 1895 |
| Meerhoff, C. E | 1603 N. Clark St., Chicago | 1891 |
| Merriman, Chas. J | 100 State St., Chicago | 1891 |
| Moorehead, W. W.* | Aledo | 1895 |
| Munroe, Grafton* | Springfield | 1890 |
| McCandless, A. H.* | Rock Island | 1892 |
| McCandless, A. W.* | 126 State St., Chicago | 1892 |
| McIntosh, F. H.* | Bloomington | 1884 |
| McMillen, Geo. A.* | Alton | 1891 |
| Newkirk, Garrett* | 31 Washington St., Chicago | 1880 |
| Newsome, B.* | Minonk | 1894 |
| Noyes, Edmund,* *Life Member* | 65 Randolph St., Chicago | 1872 |
| Noyes, F. B.* | 65 Randolph St., Chicago | 1895 |
| Nyman, J. E | 34 Washington St., Chicago | 1894 |
| Oakey, A. J | 63d St. and Stewart Ave., Chicago | 1892 |

*Present.

| NAME. | ADDRESS. | ELECTED. |
|---|---|---|
| ORMSBEE, W. W., *Life Member* | Geneva | 1865 |
| OTTOFY, LOUIS.* | Masonic Temple, Chicago | 1881 |
| PALMER, BYRON S | 631 Washington Boul., Chicago | 1889 |
| PATTERSON, F. J.* | Mendota | 1896 |
| PEARCE, R. M | Rock Island | 1891 |
| PECK, A. H.* | 65 Randolph St., Chicago | 1890 |
| PFEIFER, JOSEPHINE D.* | Masonic Temple, Chicago | 1894 |
| POWELL, C. B.* | Jacksonville | 1894 |
| PRICHETT, T. W.* | White Hall | 1877 |
| PRIESTMAN, W. H | Pontiac | 1883 |
| PRIMROSE, F.* | Springfield | 1892 |
| PROTHERO, J. H.* | Franklin & Madison Sts., Chicago | 1896 |
| PRUYN, C. P.* | 100 State St., Chicago. | 1876 |
| RAYBURN, J. R | Fairbury | 1890 |
| REED, J. J.* | Rockford | 1896 |
| REID, J. G.* | 126 State St., Chicago | 1882 |
| RICE, S. T | Barry | 1894 |
| RICHARDS, W. P | 1253 N. Clark St., Chicago | 1886 |
| ROBBINS, E. M.* | Carthage | 1882 |
| ROBERTS, BENJ. J | 516 Lincoln Ave., Chicago | 1890 |
| ROBERTS, N. J | Waukegan | 1886 |
| ROHLAND, C. B.* | Alton | 1874 |
| ROYCE, E. A | 721 Washington Boul., Chicago | 1886 |
| SALOMON, G. S | Masonic Temple, Chicago | 1885 |
| SALTER, G. B., *Life Member* | 31 Washington St., Chicago | 1871 |
| SAWYER, C. B.* | Jacksonville | 1887 |
| SCHUHMANN, H. H.* | 103 State St., Chicago. | 1892 |
| SITHERWOOD, G. D.* | Bloomington | 1880 |
| SKIDMORE, L. W.* | Moline | 1891 |
| SMITH, ARTHUR G.* | Peoria | 1896 |
| SPRINKLE, J. M.* | Nokomis | 1893 |
| STAFFORD, F. H.* | 490 W. Madison St., Chicago | 1896 |
| STALEY, H. REID | Lanark | 1894 |
| STEVENS, W. A.* | 2361 Wabash Ave., Chicago | 1876 |
| STEWART, E. H.* | Joliet | 1890 |
| STONE, E. C. *Life Member* | Galesburg | 1866 |
| SWAIN, EDGAR D.* *Life Member* | 65 Randolph St., Chicago | 1867 |
| SWASEY, J. A | 3017 Michigan Ave., Chicago | 1876 |
| TAGGART, W. H.* | Masonic Temple, Chicago | 1880 |
| TAYLOR, C. R.* | Streator | 1880 |
| THAYER, C. H | 3302 Indiana Ave., Chicago | 1885 |
| THOMPSON, C. N | 3017 Michigan Ave., Chicago | 1894 |
| THOMPSON, FLORENCE E.* | Dwight | 1896 |
| THOMPSON, G. W | Quincy | 1894 |
| TIBBETS, C. J.* | Quincy | 1882 |

*Present.

| Name. | Address. | Elected. |
|---|---|---|
| Tobey, W. W. | Danville | 1889 |
| Trompen, C. N.* | Roseland | 1892 |
| Tuller, R. B. | 877 W. Monroe St., Chicago | 1892 |
| Waltz, A. S.* | Decatur | 1877 |
| Warren, G. E.* | Pontiac | 1895 |
| Wassall, J. W.* | 208 Dearborn Ave., Chicago | 1882 |
| Watson, A.* | Galesburg | 1896 |
| Webb, G. D.* | Wilmington | 1896 |
| Wellman, H. W.* | Quincy | 1896 |
| West, C. H.* | Farina | 1892 |
| Whipple, Henry L.* | Quincy | 1896 |
| Widenham, J. C. | Jacksonville | 1874 |
| Wikoff, B. D. | Masonic Temple, Chicago | 1888 |
| Willis, A. S. | Pana | 1894 |
| Wolf, H. M. | Kewanee | 1895 |
| Wonderly, T. G.* | Galena | 1881 |
| Woolley, J. H. | 100 State St., Chicago | 1877 |
| Yorker, F. V. | 48 43d St., Chicago | 1892 |

## NONRESIDENT MEMBERS.

| | | |
|---|---|---|
| Christmann, Geo. A. | Cliff House, Manitou, Col.† | 1881 |
| Kraus, Maurice | 1 Singer Strasse 10, Vienna, Austria | 1895 |
| LeCron, D. O. M. | Union Trust Building, St. Louis, Mo. | 1892 |
| Timerman, E. C. | 1169 Broadway, Oakland, Cal. | 1896 |
| Warner, E. R. | California Bldg., Denver, Col. | 1882 |

## CORRESPONDING MEMBERS.

| | | |
|---|---|---|
| Anderson, Eli W. | 15½ E. Washington St., Indianapolis, Ind. | 1887 |
| Baldwin, C. V. | Los Angeles, Cal. | 1885 |
| Barrett, W. C. | 208 Franklin St., Buffalo, N. Y. | 1881 |
| Bowman, G. A.* | 2602 Locust St., St. Louis, Mo. | 1881 |
| Bronson, Geo. A.* | 3201 Washington Ave., St. Louis, Mo. | 1881 |
| Cochran, R. L. | Burlington, Iowa | 1885 |
| Cunningham, Geo. | 2 King's Parade, Cambridge, England | 1888 |
| Custer, Levitt E.* | Dayton, Ohio | 1896 |
| Dean, F. W. | Des Moines, Iowa | 1884 |
| French, D. Gale | Pittsburgh, Pa. | 1881 |
| Fuller, A. H.* | Columbia Building, St. Louis, Mo. | 1880 |
| Grevers, J. E. | 13 Oude Turf Markt, Amsterdam, Holland. | 1888 |
| Harper, John G.* | 800 Pine St., St. Louis, Mo | 1892 |
| Hughes, E. E. | Des Moines, Iowa | 1885 |

*Present.

| | | |
|---|---|---|
| Hunt, A. O. | Iowa City, Iowa | 1895 |
| Hurtt, J. M. | Pomona, Cal | 1890 |
| Levett, M. M. | 10 Boul. des Capucines, Paris, France | 1888 |
| Magitot, E. | 8 Rue des Saintes Pères, Paris, France | 1888 |
| Moody, J. D. | Los Angeles, Cal | 1894 |
| Moody, Kate C. | Los Angeles, Cal. | 1894 |
| Morrison, John B. | 9 When Block, Indianapolis, Ind | 1882 |
| Patrick, Geo. | Bolton, England | 1890 |
| Reed, J. W. | Butte City, Mont | 1883 |
| Reed, Thos. W. | Macon, Mo | 1883 |
| Stutenroth, C. W. | Watertown, S. D. | 1884 |
| Sylvester, A. H. | 2 Sommer Strasse, Berlin, Germany. | 1888 |
| Templeton, J. G.* | Pittsburgh, Pa | 1881 |
| Tomes, Charles S. | 39 Cavendish Square, London, England | 1888 |
| VanMarter J. G. | 81 Via Nazionale, Rome, Italy | 1888 |
| Walker, J | 22 Grovenor St., London, England | 1888 |

Total, 30. Number present, 6.

## HONORARY MEMBERS.

| Name. | Address. | Elected. |
|---|---|---|
| Brewer, F. A. | San Francisco, Cal | 1869 |
| Butler, C. R. | Cleveland, Ohio | 1874 |
| Chase, H. S. | 910 Olive St., St. Louis, Mo | 1869 |
| Chittenden, C. C. | Madison, Wis | 1872 |
| Crowley, C. Geo. | 1358 Lexington Ave , New York City | 1885 |
| Hardtner J. | Springfield, Ill | 1877 |
| Ingersoll, L. C. | Keokuk, Iowa | 1873 |
| Miller, W. D. | 46 Voss Strasse, Berlin, Germany | 1885 |
| Morrison, James B. | 1422 Baltimore Ave., Kansas City, Mo. | 1869 |
| Morrison, W. N* | 1401 Washington Ave., St. Louis, Mo. | 1871 |
| McKellops, H. J. | 3548 Lindell Ave., St. Louis, Mo. | 1868 |
| Porre, R. J. | 278 Race St., Cincinnati, Ohio. | 1868 |
| Rathbun, R. S. | Clinton, Iowa | 1872 |
| Taft, J. | Elm and Shillito Ave., Cincinnati, O. | 1874 |
| Wilson, I. P. | Burlington, Iowa | 1874 |

Total, 15. Number present, 1.

## ROLL OF HONOR.

Specially Honored by the Society.

| | | | |
|---|---|---|---|
| Black, G. V.* | 1889 | Cushing Geo. H* | 1889 |

*Present.

†Chicago address, 507 LaSalle Avenue.

## RESUME.

| | Total. | Present. |
|---|---|---|
| Active Members in Illinois (except Chicago), *Life*, *8* | 109 | 70 |
| Chicago, *Life*, *14* | 81 | 36 |
| Nonresident Members | 5 | 0 |
| Corresponding Members | 30 | 6 |
| Honorary Members | 15 | 1 |
| *Present. | 240 | 113 |

# MINUTES

OF THE

# ILLINOIS STATE DENTAL SOCIETY.

## MEETING OF 1896.

FIRST DAY—TUESDAY, MAY 12—MORNING SESSION.

The thirty-second annual meeting of the Illinois State Dental Society was called to order at 10:30 o'clock, in the Senate Chamber at Springfield, by the President, Dr. W. A. Stevens, of Chicago.

The roll call showed that forty-six members were present at the opening session.

The amendment to the constitution published on page 230 of the transactions of 1895, with some additional recommendations made by the Executive Council was then on motion, adopted.

Invocation by the Rev. Euclid B. Rogers, of Springfield.

President Stevens then introduced the Hon. John P. Altgeld, Governor of Illinois, who said :

### ADDRESS OF WELCOME.

*Mr. President and Gentlemen:*

I am very glad to welcome you back here this year. I remember of spending a pleasant half hour with you two years ago, and I was greatly interested in your proceedings at that time. I feel like congratulating you upon the advancement you are making in building up, in developing and in elevating your profession. Not very long since your calling was not regarded as a profession. It was looked upon more in the nature of a trade than that of a professional occupation ; but it has developed through the efforts of the men at the head of it. The farther they carried their investigation, the harder they worked day by day, the more important the subjects grew, until step by step they have pushed it forward and put it upon the plane of a learned profession—a profession that requires honor and character to make a success of it.

These meetings are calculated to stimulate a spirit of rivalry and a spirit of investigation. I can understand how many men working alone, very ambitious and industrious, drawing inspiration from the consciousness of a high purpose, can go on and do great work, can push themselves forward and in a manner draw their profession with them. But after all, these meetings bringing the various members together, causing an exchange of ideas, rubbing up against each other, as it were, tend to stimulate all. I venture to say that all of you go away from meetings of this character with a firmer purpose, with somewhat advanced and broader ideas, feeling the importance of your profession in a manner that you have not quite felt before. Ordinarily, there is no trouble with what we call leading men of a profession. They are always strong original characters, and in any calling they will rise to the top. They reach the high rung of the ladder. But to place a profession on a high plane it is necessary to bring the great mass up higher, and the majority of members of any profession do not possess this high ambition, this resolute determination to reach the highest point possible. They are content to move along in the ordinary paths and continue to earn a fair living. This holds true of other professions than dentistry. It is necessary to have some general regulation which shall, so far as possible, elevate the standard of intelligence and the standard of qualification even for the lowest in the profession. The medical profession in this State has proceeded upon the theory that while the leaders of it are strong characters and need no legislation, legislation is necessary for others; that to keep the whole profession on as high a plane as possible it is necessary to prescribe certain qualifications. It is necessary to provide that a man shall have a certain amount of English education before he begins the study of medicine, and to provide that he shall have a certain amount of medical education before he begins the practice of medicine, for you cannot put brains into a man's head by training, but you can give him practical ideas and he can make a success of himself. He may be good theoretically, but not practically. By such a method you secure a high standard of intelligence and professional knowledge.

If a man shows that he has a certain amount of English education, and that he has a certain degree of knowledge of the human system and its diseases, then he can practice, if he sees fit. But before he is allowed to hang out his shingle and advertise himself to the world as a doctor he must possess a certain degree of medical knowledge. This is the theory upon which the medical profession of our State is moving forward. I do not know whether you find it advantageous to move along that line or not, but it seems to me to be eminently proper.

From what information I can get in regard to the dental profession, I have been able to learn that there is no State in the union in which the dental profession is in advance of the profession in this State. You are in a position to lead the way and by pushing along those lines which will insure a reasonable degree of education, a reasonable degree of intelligence even of the lowest members in your profession, you will place your profession upon an exalted plane. The medical profession in our State to-day is regarded as occupying the highest plane of any State in this union. Some foreign members recognize that a license to practice medicine in the State of Illinois is everything that is required.

Our State is moving along in all lines in a manner that places it at the head of the great States, not only of the union but of the world. There is not a line of human activity that you can think of but what our State is leading, and I want

you to lead in the dental profession. As a profession, you must go right on, climbing a little higher and higher every year. You must strive for everything that is necessary to enable you to carry your profession to the highest notch which human activity and intelligence can reach. After a somewhat extended experience in the affairs of the world and a somewhat extended observation, I might say to you that I know of no position in life that is more desirable, that will contribute more to the satisfaction and to our comfort in life, more to making a man feel that he is of use in the world and doing something for the world than to be a member of your honorable profession. (Applause.)

President Stevens then introduced, in a few well chosen words, Mayor Woodruff, of Springfield, who delivered the following address of welcome on behalf of the citizens of Springfield:

ADDRESS OF WELCOME BY MAYOR WOODRUFF.

*Mr. President, Ladies and Gentlemen of the Illinois State Dental Society:*

Your Chairman suggested to me that if the Mayor desired any pulling done, he might call on the members of this society. I simply want to say to you that I have had a little experience along that line, and I do not care to have any more.

To the members that are assembled here, I simply want to say that the city of Springfield prefers rather to have within her borders tooth pullers than those who pull legs. I do not know how it comes that I should have courage enough to meet all of you at this time, after having come in close contact with one member of your profession during my life, and ever since that time I have been thinking of tack hammers, buzz saws and Gatling guns.

However, throwing humor aside, Springfield gladly welcomes you, and we hope that you will come again. We are always proud to see members of any society, and especially those of the professional organization assembled here to-day. If there is anything in the city, after you have gotten through with your labors, that you desire, you can get it, and if there is anything you do not like, leave it, so that it may be given to somebody else. Springfield has not everything on earth, but she has something of everything, and all of these things are at your command while here. We have some of the best people as well as some of the worst. We have factories and churches, and we have good preachers—in fact, we have something of the very best that you will find in the world.

I know but very little about your profession or its members, but I am glad to say that Springfield has for a neighbor another city (Jacksonville) in which I am reliably informed one of the best and greatest students of your profession lives—Dr. Black. (Applause.)

A great many people believe in 16 to 1, but I understand that your profession believes in the other number because you use all gold. You are welcome to a city whose people believe that McKinley will be nominated for President; you are welcome to a city where a great many people believe that our present Governor, if he so desires, will be reëlected. You are welcome to a city where the people to some extent believe that we shall have some reform along the line of the daily press. We do not believe that the press represents public opinion as it

should do. Some of us have come to look upon newspapers as voicing simply the ideas of their editors, and not expressing public sentiment and public opinion as they should. You are welcome to a city which is one of the most remarkable on the face of the earth, where it is said that even three men of Springfield can almost nominate a candidate for President. You are welcome to everything that we have.

I hope that after you have gotten through with your deliberations, you will call upon the business men and the professional men of the town, meet them, and exchange ideas. Again, I bid you welcome. (Applause.)

On behalf of the society, Dr. E. K. Blair, of Waverly, responded to the addresses of welcome of Governor Altgeld and Mayor Woodruff in the following words:

*His Excellency, the Mayor, Mr. President, Ladies and Gentlemen of the Illinois State Dental Society:*

We have for the second time been honored by Governor Altgeld with an address of welcome; supplemented to this we have the cordial remarks of the Mayor of our capital city. My only regret is that we have so few of our own members present to hear the words of encouragement so heartily spoken by these executive officers, who speak for the people of the commonwealth of the State of Illinois and of this municipality. Our society enjoys a membership of about 200. These practitioners of dentistry come from the ranks of a profession whose registered membership in this State is about 1,800. It would be gratifying indeed if fully 1,000 of these knights of the mallet and pluggers—these repairers of diseased tissues in the oral cavity, were present at this meeting within range of the voices of these speakers, as they have uttered such glowing words of encouragement to us in our work. It seems to me that it is well for us to pause for a moment in the routine work of our annual conventions and hearken to the voices of the laity. The impressions we are making upon the public cannot be wholly disregarded and we are fortunate in hearing the public opinion of our status from such eminent sources as we have to-day. Let me say to Governor Altgeld and the Mayor of Springfield that our annual meetings are given up wholly to the study of our chosen profession. This is true to a remarkable extent. So much so that the transaction of all executive business pertaining to the management of our society is placed in the hands of an executive council which is compelled to meet at some other time than when this society is in session. The only executive business transacted in this society is the election of president, vice president and three members of the executive council. This leaves us free to proceed with clinics and the reading and discussion of papers through three long sessions each day

It is a source of much gratification in this age of rapid advancement in the sciences and arts that our profession is showing such untiring devotion to the work in hand. Within the memory of many of our members present there was a period when the list of students, in fact within our profession, could be numbered without much effort, but such has been the progress in our work, so great has been the applause from our own profession for new discoveries, so rich the reward for real merit, that to-day the number of devoted students to the science of dentistry is almost legion. Throughout the length and breadth of our

land, from the lowliest office in the humblest quarters to the splendidly equipped apartments of our ablest scientific investigators there is burning the midnight lamp of these untiring benefactors of mankind. The progress of their work is marked by the substitution of the new, the useful, and the beautiful for methods and appliances relegated to the background, because of unfitness. Properly conceived theories have been strengthened by the light of thorough investigation, and the unsound doctrine of the vagarist has been swept away before the relentless progress of a progressive profession in a progressive age. I wish that I could for a moment catch the ear of the people of our great State, that I might impress upon their minds the value of the research of these students. In this age of money getting we too often fail to appreciate the value of contributions to the healing art, to science, to the wants and necessities of mankind. One year ago our little society gave from its treasury a small sum to one of our foremost investigators, funds to be used in the progress of its study. Whilst the amount was small in comparison with the needs of the hour and the ability of the student to turn its use to good account for our profession and through us to our patients, it was given with a generous hand, carrying with it only the regret that it was not more. It is not so much after all what the amount might have been, as the spirit with which it was given. Without a dissenting voice, as a unanimous vote of confidence our society said to this brother member that we believed his researches in the past warranted not only verbal encouragement, but substantial aid in the future. His researches have been conducted almost in the shadow of the dome of this great building, and their value has already been acknowledged in two hemispheres. This is only one instance of devotion to the study of our science by a member of our profession. His life work has added luster to an admiring profession. Everywhere the good work is going on.

Within the limits of the city of Chicago are many who take rank in their different specialties in our profession, for we are already widening the field of labor, so that we must become specialists if we succeed according to the measure of the hour. Their names are coextensive with the growth of dental education. Our State at large is the home of many worthy practitioners. Let me say to the Governor and the Mayor that we are daily gaining strength in our work. Contact with each other renders us more secure in our opinions, but we are not unmindful of the value of words of encouragement from those outside of our profession. That which has been said to-day will serve to beckon us into the beyond. There can be no standing still in the life work of any dentist. We are either moving forward or backward, and no one who has heard your addresses to-day will shirk the responsibility resting upon them as conservators of the welfare of the oral cavity. We appreciate your presence and value highly the words of encouragement spoken. On behalf of this society permit me to thank you heartily.

The Vice President, Dr. C. R. Taylor, of Streator, then took the chair and President Stevens delivered the annual address.

The discussion was opened by Dr. Johnson, who was followed by Drs. Cigrand (B. J.), Blair, Koch, Harlan, Reid, Newkirk, Sitherwood, Swain, Allen, and closed by Dr. Stevens.

On motion, the subject was passed.

On motion, adjourned.

AFTERNOON SESSION.

The meeting was called to order at 2:30 P. M. by the President.

The minutes of the last session were read and approved.

The report of the Committee on "Dental Science and Literature" was then read by Dr. A. W. Harlan, of Chicago.

A paper entitled "New Method for Constructing Bicuspid Band Crowns with Porcelain Facing and Cusps," was then read by Dr. B. J. Cigrand, of Chicago.

The discussion was opened by Dr. Wassall, and continued by Drs. Sitherwood, Ames, Taggart and Morrison (St. Louis), and closed by the essayist.

On motion, the subject was passed.

The report of the Committee on "Dental Art and Invention" was then read by Dr. Geo. J. Dennis, of Chicago.

On motion, the subject was passed.

Drs. Barnett, Cigrand (P. J.), Kane, Patterson and Whipple were announced as having been elected to active membership and formally introduced to the Society.

On motion, adjourned

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SECOND DAY—WEDNESDAY, MAY 13.

The forenoon was devoted to Clinics. (See report of the Supervisor of Clinics.)

AFTERNOON SESSION.

The meeting was called to order at 2:30 o'clock by the President, Dr. W. A. Stevens.

The minutes of the previous session were read and approved.

A paper entitled "Cervical Fillings and Clamps" was then read by Dr. J. Austin Dunn, of Chicago.

The subject was discussed by Dr. Geo. H. Cushing, and on motion, passed.

A paper entitled "New Outlooks in Dentistry" was then read by Dr. C. E. Bentley, of Chicago.

The discussion was opened by Dr. Rohland, of Alton, continued by Drs. Newkirk, Harlan, Pruyn, Cormany, Coulson, and closed by the essayist.

On motion, the subject was passed.

A paper entitled "Shock" was then read by Dr. Garrett Newkirk, of Chicago.

The discussion was opened by Dr. Johnson, who was followed by Drs. Black, Taylor, Brophy, Cormany, McIntosh, Ames, and closed by the essayist.

On motion, the subject was passed.

On motion, adjourned.

### Evening Session.

The meeting was called to order at 8:30 P. M., by the President, Dr. W. A. Stevens.

The minutes of the previous session were read and approved.

A paper entitled "Cataphoresis" was then read by Dr. W. W. Moorehead, of Aledo.

The discussion was opened by Dr. Keefe, of Chicago, and continued by Drs. L. E. Custer, of Dayton, Ohio; Rohland, Wassall, Cormany, Ames, and closed by the essayist.

On motion, the subject was passed.

Dr. Black, chairman of the Committee on Necrology then read the report of the Committee relating to the deaths of Drs. E. B. Call, of Peoria, E. W. Bushong, of Macomb, and Mr. S. R. Bingham, of Chicago.

On motion of Dr. Newkirk, seconded by Dr. Noyes, the report of the Committee was adopted by a rising vote.

A paper entitled "To What Extent is the Washing of Amalgam Masses an Important Feature in the Production of a Good Filling?" was then read by Dr. T. W. Prichett.

On motion, the society adjourned.

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THIRD DAY—THURSDAY, MAY 14.

The forenoon was devoted to clinics, (See report of the Supervisor of Clinics).

AFTERNOON SESSION.

The meeting was called to order at 2:30 P. M., by the President, Dr. Stevens.

The minutes of the previous session were read and approved.

A telegram from the Texas State Dental Association, now in session at Waco, was then read, and on motion, the Secretary was instructed to acknowledge receipt of the same and to return the good wishes expressed.

A communication from Dr. Crouse (who is unavoidably absent on account of business in New York in connection with the work of the Dental Protective Association) was then read.

A cordial invitation to attend the meeting of the Michigan State Dental Association at Grand Rapids was then read, and the Secretary instructed to acknowledge the same.

A paper entitled "Early Diagnosis of Malignant Tumors of the Maxillæ" was then read by Dr. H. H. Schuhmann, of Chicago.

The discussion was opened by Dr. Pruyn, who was followed

by Drs. Taylor, Brophy, Tibbets, Gilmer, and the discussion closed by the essayist.

The report of the "Result of the Testing of the Twenty-nine Amalgam Fillings" was then presented by Dr. Black.

The discussion was opened by Dr. Kester, who was followed by Drs. Reid, Duncan (S. F.), Newkirk, Gilmer, Koch, Brophy, Harlan, Blair, Sitherwood, Cormany, Cigrand (B. J.), Taylor and West, and closed by Dr. Black.

On motion, the subject was passed.

On motion, adjourned.

Evening Session.

The meeting was called to order at 8:30 P. M., by the President, Dr. Stevens.

The minutes of the previous session were read and approved.

On motion, the report of Dr. Black was received and ordered published as presented by himself.

The report of the Supervisor of Clinics was then read by Dr. Cormany.

The report was discussed by Drs. Brophy, Rohland, Harlan, Koch, Taylor, Sitherwood, Black, Wassall, Gilmer, Cushing, Johnston, Taggart, Ames, Robbins and others.

On motion, the subject was passed.

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FOURTH DAY—FRIDAY, MAY 15.

The meeting was called to order at 9:00 A. M. by the President, Dr. Stevens.

The minutes of the previous session were read and approved.

The Nominating Committee reported that they recommend

for members of the Council for a term of three years, A. H. Peck, of Chicago, R. N. Laurance, of Lincoln and L. W. Skidmore, of Moline.

On motion, the nominations were confirmed.

The following officers were then elected by the Society: C. R. Taylor, Streator, President; E. B. David, Aledo, Vice President.

The president-elect was then escorted to the chair, and Dr. Stevens, the retiring president, presented him to the society in a few well chosen words.

On taking the chair, Dr. Taylor in accepting the presidency, thanked the society for the honor conferred upon him.

The Vice President elect, Dr. E. B. David, of Aledo, was then introduced to the society, and thanked the members for the honor conferred upon him.

The President appointed the following Publication Committee: Drs. Louis Ottofy, A. W. Harlan and Edmund Noyes.

On motion of Dr. Harlan, a committee of three, consisting of Drs. C. R. E. Koch, E. K. Blair and L. L. Davis was appointed, for the purpose of preparing suitable amendments to the present dental law of this State. They were further instructed to secure the approval of the Governor of the State, of the proposed amendments, and to request the Governor to incorporate a recommendation for their passage in his message to the legislature; also to secure, if possible, their passage on part of the next legislature.

During the four days' meeting the Secretary at various times announced the following as having been elected to membership by the Executive Council:

Barnett, H. K., Jerseyville.
Cigrand, P. J., 718 S. Halsted St., Chicago.
David, G. L., Aledo.
Henderson, G. H., Springfield.
Henderson, L. D., Evanston.
Henry, T. F., Streator.
Hewes, C. T., Quincy.

Kane, J. K., Pinckneyville.
Patterson, F. J., Mendota.
Prothero, J. H., Madison and Franklin Sts., Chicago.
Reed, J. J., Rockford.
Smith, Arthur G., Peoria,
Stafford, F. H., 490 W. Madison St., Chicago.
Thompson, Florence E., Dwight.
Watson, A., Galesburg.
Webb, G. D., Wilmington.
Wellman, H. W., Quincy.
Whipple, Henry L., Quincy.
Reinstated: Trompen, C. N., Roseland.
For corresponding membership: Custer, L. E., Dayton, Ohio.

Nonresident membership:

Christmann, Geo. A., Cliff House, Manitou, Col.†
Kraus, Maurice, I Singer Strasse 10, Vienna, Austria.
LeCron, D. O. M., Union Trust Bldg., St. Louis, Mo.
Timerman, E. C., 1169 Broadway, Oakland, Cal.
Warner, E. R., California Bldg,, Denver, Col.

†Chicago address: 507 La Salle Ave.

The minutes of the present session were read and approved.

On motion, the Society adjourned to meet at Peoria, Tuesday, May 11, 1897.

LOUIS OTTOFY, *Secretary.*

# 1896.

# PROCEEDINGS

OF THE

# EXECUTIVE COUNCIL,

## ILLINOIS STATE DENTAL SOCIETY.

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TUESDAY, MAY 12.—First Meeting.

The Executive Council met in the State House, at 9 A. M., a quorum being present.

The reports of the Secretary and Treasurer were then read and referred to the Auditing Committee.

### SECRETARY'S REPORT.

Springfield, May 12, 1896.

*Mr. President and Gentlemen:*

Your Secretary presents the following annual report:

| | |
|---|---|
| Total active membership at beginning of last meeting | 165 |
| New members elected during last meeting | 19 |
| Total at close of meeting | 184 |

There have been lost by resignation:

S. Leslie LeCron.
F. G. Stover.
C. W. Carson.

By nonpayment of dues:

J. Sidney Goodmanson, Tiskilwa.
C. B. Helm, Rockford.
L. T. Phillips, Nashville.
E. H. Place, Freeport.
F. R. Ross, Chicago.

By death :

E. W. Bushong, of Macomb.

E. B. Call, of Peoria.

Total..... 10

Leaving the present membership..... 174

The number of honorary members remains at..... 15

The number of corresponding members* is increased from 29, by the election of Dr. A. O. Hunt, to..... 30

Total..... 45

In conformity with an amendment now pending before the society enabling nonresidents to retain their membership at an annual fee of one dollar, all those members who have removed from the State, and are known to be living, were notified, and as a result the following applications are now pending :

To be transferred from the present active membership list :

Geo. A. Christmann, Manitou, Col.

D. O. M. LeCron, St. Louis, Mo.

Maurice Kraus, Vienna, Austria.

To be elected nonresident members :

E. C. Timmerman, Oakland, Cal.

E. R. Warner, Denver, Col.

Total..... 5

The following is a list of moneys received since the last annual report :

| | |
|---|---|
| Dues received at last meeting | $345 00 |
| Dues received from close of last meeting to date | 165 00 |
| Dues from nonresident members | 4 00 |
| Copy of Transactions of 1893, Dr. J. H. Prothero | 1 00 |
| Copy of Transactions, 1895, Dr. J. T. Wallace, Canton, Mo | 1 00 |
| | $516 00 |

For which the Treasurer's receipts are herewith submitted.

LOUIS OTTOFY, Secretary.

Your Auditing Committee have examined the Secretary's report, and find the same correct.

E. K. BLAIR,
E. B. DAVID,
S. F. DUNCAN,
} Auditing Committee.

## TREASURER'S REPORT.

Edgar D. Swain in account with the Illinois State Dental Society, 1895-6.

| | | | | |
|---|---|---|---|---|
| 1895. | | | | |
| June 20, | Received from | late Treasurer, | W. A. Stevens | $262 60 |
| July 22, | " | " | Secretary | 345 00 |
| Aug. 20, | " | " | " | 20 00 |
| 1896. | | | | |
| May 11, | " | " | " | 151 00 |
| | | | | $778 60 |

*Dr. C. W. Spalding died June 9, 1896, at River Point, R. I.

1895. Expended.

| | | | | |
|---|---|---|---|---|
| May 17, | Order | 136. | G. V. Black..... | $200 00 |
| May 17, | " | 137. | Secretary's salary and Exec. Com. expenses.... | 140 50 |
| May 23, | " | 138. | E. C. Stone. Printing and advertising..... | 7 50 |
| July 29, | " | 139. | Wm. Whitford. Stenographer..... | 100 00 |
| Oct. 19, | " | 140. | Secretary (postage on transactions)..... | 38 25 |
| 1896. | | | | |
| Feb. 8, | " | 141. | H. D. Justi & Son. Publishing transactions... | 200 00 |
| Feb. 11, | " | 142. | Secretary's expenses from May '95 to May '96... | 26 43 |
| | | | | $712 68 |
| Balance in treasury..... | | | | $65 92 |

Respectfully submitted,

EDGAR D. SWAIN, Treasurer.

We, the Auditing Committee find the above report correct.

E. K. BLAIR,
S. F DUNCAN,
E. B. DAVID.

SPRINGFIELD, ILL., May 13, 1896.

We the undersigned members of the auditing committee respectfully report that we have examined the reports of the Secretary and Treasurer of the Illinois State Dental Society, and found the same correct.

Your committee suggest the adoption of the following recommendations.

*First*, The Secretary shall turn over to the Treasurer all funds in his hands at the close of each annual meeting. And thereafter shall make monthly reports and payments of all funds collected.

*Second*, That the Secretary report annually to the Executive Council of this society, the number and names of all members not in arrears. Also the names of members delinquent with the amount of arrearage in each case.

Respectfully submitted,

E. K. BLAIR,
S. F. DUNCAN,
E. B. DAVID,
} Auditing Committee.

The report of the Publication Committee was then read, and on motion, adopted:

## REPORT OF THE PUBLICATION COMMITTEE.

SPRINGFIELD, May 12, 1896.

*Mr. President and Gentlemen:*

Your committee authorized the DENTAL REVIEW, H. D. Justi & Son, publishers, to publish such portions of the transactions of 1895, as they desired, in the DENTAL REVIEW, and in consideration therefore, H. D. Justi & Son, paid all expenses except postage, and they were paid $200.00 by the society. The volume

for 1895, is the largest ever published by the society, containing nearly 300 pages. The last article appeared in the DENTAL REVIEW of September 25, and the appearance of the volume was delayed until November 20, on account of the voluminous index.

There are about twenty copies cloth bound, and seventy-five copies paper covered on hand. Cost of postage, delivery, etc., is included in the accounts of the secretary.

Your committee has completed arrangements with H. D. Justi & Son, on the same terms as last year, except that the publishers shall be paid $150 instead of $200, and furnish 300 cloth bound and 200 paper covered copies.

Respectfully submitted,

LOUIS OTTOFY, Chairman;
A. W. HARLAN,
EDMUND NOYES,
Publication Committee.

The President appointed Drs. Blair, Duncan and David to act as the Auditing Committtee.

A special committee consisting of Drs. Allen, Cormany, McCandless, (A. H.) Ottofy and Peck, appointed last year to further investigate the charges of violation of the code of ethics on the part of a member of the Society, then made the following report:

TO THE EXECUTIVE COUNCIL.

SPRINGFIED, ILL., May 12, 1896.

*Mr. President and Gentlemen:*

The special committee appointed to investigate the charges of violation of the code of ethics on part of Dr. Frank G. Stover, of Rockford, Ill., beg leave to offer the following report:

The committee met in Rockford, Ill., October 16, 1895, and after a careful examination of the case decided to permit Dr. Stover to pay his dues in full to May 12, 1896, and to recommend to you to accept his resignation.

E. H. ALLEN, Chairman.
LOUIS OTTOFY, Secretary of the Committee.

On motion, the report of the committee and the resignation of Dr. Frank G. Stover was accepted.

The following Committee on Necrology, was then appointed: Drs. G. V. Black, Edmund Noyes and W. A. Johnston.

The Treasurer was authorized to pay all duly authenticated bills.

The incoming President was appointed to deliver the next annual address.

The President and Secretary were authorized to grant delegates' certificates to those desiring to attend the meeting of the American Dental Association.

The following votes of thanks were, on motion, adopted :

*Resolved:* That the Illinois State Dental Society extend its thanks to the S. S. White Dental Manufacturing Company, for printing and distributing the programmes in so satisfactory a manner.

*Resolved:* That on behalf of the Illinois State Dental Society, the Executive Council extends the thanks of the society to the Secretary of State, for the use of the Senate Chamber and committee rooms, and to the hotels and railroads for reduced rates.

On motion, the dues of Dr. Byron S. Palmer, of Chicago, for the year 1896--97, were remitted, on account of the unfortunate loss of eyesight during the past year and his consequent inability to practice dentistry.

On motion, adjourned.

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SECOND MEETING.

The council met at 2 P. M., a quorum being present.

The minutes of the previous meeting were read and approved.

The following named persons were proposed for membership by the Board of Examiners. For nonresident membership Dr. E. C. Timerman, of Oakland, Cal., and Dr. E. R. Warner, of Denver, Col. For active membership : J. K. Kane, of Pinckneyville ; Henry L. Whipple, of Quincy ; P. J. Cigrand, D. D. S., of Chicago; H. K. Barnett, D. M. D., of Jerseyville, and F. J. Patterson, D. D. S., of Mendota.

These names having been duly posted, they were all voted on and elected.

On motion, adjourned.

WEDNESDAY, MAY 13—First Meeting.

The council met at 5:30 P. M., a quorum being present.

The minutes of the two previous meetings were read and approved.

The following named persons were proposed for membership by the Board of Examiners: T. H. Stafford, D. D. S., of Chicago; J. H. Prothero, D. D. S., of Chicago; A. Watson, D. D. S., of Galesburg; G. L. David, D. D. S., of Aledo; G. D. Webb, D. D. S., of Wilmington; Arthur G. Smith, D. M. D., of Peoria; T. F. Henry, D. D. S., of Streator; J. J. Reed, D. D. S., of Rockford; G. H. Henderson, L. D. S., D. D. S., of Springfield, and Florence E. Thompson, D. D. S., of Dwight.

These names having been duly posted they were all voted on and elected.

The Auditing Committee then made its report which was on motion, adopted.

The special committee consisting of Drs. Black, Johnson, and Ottofy, appointed last year to confer with ex-President Cormany, regarding the publication of some suitable pamphlet for the use of the general public, then made a verbal report, which was on motion, accepted and the committee continued.

Dr. Allen, the chairman of the special committee, appointed last year for the purpose of increasing the membership of this Society, made a verbal report, to the effect that the committee is of the opinion that certain methods may be adopted to bring about the end in view, and recommended that an appropriation of $75 be made for this purpose.

On motion, the report was adopted.

On motion, the committee was discharged.

On motion, Dr. Allen was appointed a committee of one, with power to issue such circular letters, information, etc., to the dentists of Illinois, that he may deem desirable to increase the mem-

bership of this society, and the sum of $75 was appropriated, and placed at the disposal of Dr. Allen to defray the expenses that may be incurred.

On motion, adjourned.

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THURSDAY, MAY 14—First Meeting.

The council met at 5 P. M., a quorum being present.

The minutes of the previous meeting were read and approved.

The following named persons were proposed for membership by the Board of Examiners: L. D. Henderson, D. D. S., of Evanston; C. T. Hewes, D. D. S., of Quincy, and H. W. Wellman, D. D. S., of Quincy.

These names having been duly posted, they were all voted on and duly elected.

The cities of Quincy and Peoria were placed in nomination for the next place of meeting.

Peoria was selected as the next place of meeting.

The following appointments were then made:

Dr. J. G. Reid, of Chicago, Executive Committee.

Dr. A. W. Harlan, of Chicago, Committee on Dental Science and Literature.

Dr. J. E. Keefe, of Chicago, Committee on Dental Art and Invention.

Dr. C. B. Rohland, of Alton, to succeed himself on the Board of Examiners.

Committee on the Infractions of the Code of Ethics: C. R. E. Koch, of Chicago; D. E. Coulson, of Galesburg and W. E. Holland of Jerseyville.

Local Committee of Arrangements: W. A. Johnston and Arthur G. Smith, of Peoria.

The usual salary of $100 was voted to the Secretary.

The following officers were elected:

Secretary, Louis Ottofy, of Chicago; Treasurer, E. D. Swain, of Chicago; Librarian, J. R. Rayburn, of Fairbury.

On motion, an appropriation of $10.00 was made to the Janitor of the building.

On motion, adjourned.

SECOND MEETING.

The Council met at 10 P. M., a quorum being present.

The minutes of the previous meeting were read and approved.

Dr. T. W. Prichett, of White Hall, was appointed Supervisor of Clinics.

The following communication was read, and on motion adopted:

*To the Executive Council:*

The undersigned respectfully call your attention to a growing evil, which has now reached such proportions as to call for some remedy. They refer to the crowded condition of the clinics, caused by the admission of so many dentists of the State, who are not members, and do not ever intend to join. It would seem as though the privileges of the clinics should be reserved for the members and visiting brethren from other States—for those only who are usually entitled to the courtesies of the floor.

R. N. LAURANCE,
T. W. PRICHETT,
C. B. ROHLAND,
W. A. JOHNSTON,
GARRETT NEWKIRK,
JAMES W. CORMANY,
J. A. CURRY,
T. C. WONDERLY,
W. W. MOOREHEAD.

On motion, the Secretary was instructed to publish in the programme for next year the following:

SPRINGFIELD, ILL., 1896.

"But owing to the fact that a number of gentlemen residing in the State, but not members of the Society, have made it a practice for several years of attending the clinics and crowding about the chairs to the exclusion of our own members, it has been found necessary to exclude from the clinic room all but members of the Society, or those who have made application for membership, and invited visiting dentists from outside the State."

The following recommendation of members of the Society and of the Board of Examiners was concurred in, and on motion, Dr. L. E. Custer, of Dayton, Ohio, was elected a corresponding member of the Society:

SPRINGFIELD, May 14, 1896.

We, the undersigned, recommend Dr. L. E. Custer, of Dayton, Ohio, for corresponding membership in the Illinois State Dental Society. This recommendation is in consideration of his services in the advancement of dental science.

A. W. HARLAN,
J. W. WASSALL,
GARRETT NEWKIRK,
EDGAR D. SWAIN,
GEO. H. CUSHING,
C. B. ROHLAND,
THOS. L. GILMER,
S. F. DUNCAN,
T. W. PRICHETT,
LOUIS OTTOFY.

Recommended by the Board of Censors. { C. B. ROHLAND, T. W. PRICHETT, EDGAR D. SWAIN.

The following resolution was on motion adopted:

*Resolved*, That the Secretary is hereby instructed to notify all delinquent members of the Society that hereafter the Executive Council will order the reading of the delinquent list before the Society when in general session.

On motion, the recommendation of the Committee on Necrology was concurred in, and the Secretary instructed to set aside two pages for the publication of a likeness and the obituary notice of the late Mr. S. R. Bingham, of Chicago.

On motion, the Secretary was instructed to send a copy of the report of the Committee on Necrology to the families of the diseased.

On motion, adjourned.

FRIDAY, MAY 15—First Meeting.

The council met at 9 A. M., a quorum being present.

The minutes of the previous meeting were read and approved.

The bonds of the Secretary and Treasurer were on motion approved.

On motion, the President was authorized to fill vacancies which may occur on any committee during the year.

The Secretary was ordered to submit the minutes of the Society, before publication, to Drs. Cushing, Johnson and Noyes for correction and approval.

The Secretary was authorized to provide special badges for those attending the meetings of the Society from outside of the State.

The minutes of the present meeting were read and approved.

On motion, adjourned.

Louis Ottofy, *Secretary.*

# OBITUARY.

The Illinois State Dental Society, in Annual Convention assembled, pauses in its deliberations to pay a merited tribute of respect to the memory of those who, during the past year, have been taken from its rolls and transferred to the throngs in the Great Beyond.

# Stillman R. Bingman.

Stillman R. Bingham died at his residence in Highland Park, Illinois, February 1, 1896.

Mr. Bingham is dead. The man who was not a member of this society, and yet was more than a member. The man who was the society's friend. The man who was the personal friend of each member of the society, both when in the assembled association and outside of our gatherings. The man who by his wise counsel assisted in the organization of this society, and was ever contributing to its prosperity by discreet acts of kindness toward us as a body, and toward our members individually. He was nearly always with us at our meetings, and at the few times when he failed us we missed him; and now that he will come no more, we mourn his absence.

Mr. Bingham was the manager of the first dental supply house opened in Chicago, or the State of Illinois. In the management of this business he won for himself the love and

esteem of the dental profession. While always attending closely to that business he was ever ready to turn aside for a moment to counsel with patron or friend, or to lend a helping hand to the Illinois State Dental Society, or any one of the dental organizations within the large circle of his acquaintance. While a tradesman, he was much more than a tradesman. Among men he was a man, large hearted, wise, jovial, distributing joy, wisdom, and moral and Christian influences among us at all times.

We mourn his loss as a business man. We mourn his loss as a friend of our society. We mourn his loss as a man exercising unusual influences for good in the dental profession. Individually, we mourn his loss as a personal friend. We mourn his loss to his immediate family, and extend to them our heartfelt sympathy.

It is recommended to the council of this society that two pages of our Transactions be set apart to the memory of Mr. Bingham, and that one of these contain a copy of his likeness.

G. V. BLACK,
EDMUND NOYES,
W. A. JOHNSTON,
} Committee.

## Edward B. Call, Peoria, Ill.

Edward B. Call, D. D. S, was born in West Moreland County, Pennsylvania, April 29, 1831. Died after an illness of three years, January 21, 1896. He married Miss Catherine Firestone, February 25, 1852, in Connelsville, Pennsylvania, who with three sons and two daughters survives him.

Beginning the practice of dentistry in July, 1857, he made it his life work, practicing by day, studying and experimenting by night. For meritorious work in the profession he was granted the Honorary Degree, D. D. S., by the Chicago College of Dental Surgery, in 1885.

Dr. Call's bent was toward metal work, and seamless gold crowns were perfected by him. At a clinic given before the Illinois State Dental Society at Rock Island, in 1881, Dr. Call stamped the first seamless gold crown on record. Two years afterward, he succeeded in producing an almost perfect contour to seamless crowns.

His mechanical ingenuity prompted him to invent a number of appliances which in later years he put upon the market, having retired from practice in 1893.

Dr. Call was an active and enthusiastic member of several dental societies, a life member of the Illinois State Dental Society, and for twenty-five consecutive years an attendant upon its meetings. Of commanding presence, a gentleman by nature, and generous to a fault, Dr. Call has left to us an example in many respects worthy of emulation.

G. V. Black,
Edmund Noyes,
W. A. Johnston,
} *Committee.*

## E. W. Bushong, Macomb, Ill.

Dr. E. W. Bushong, of Macomb, has died during the present session, Tuesday morning, May 12. He has been a member of our society but one year, and was but little known to our members. He was born in Virginia, and came to Illinois in 1887. He soon afterward became a student in the office of Dr. T. H. Downing, and has been a student or practitioner of dentistry since that time. He leaves a family, to whom the members of this society desire to express their sympathy and condolence.

G. V. Black,
Edmund Noyes,
W. A. Johnston,
*Committee.*

## C. W. Spalding, River Point, R. I.

Died at River Point, R. I., June 9, 1896, C. W. Spalding, M. D., D. D. S., in the eighty-second year of his age.

Dr. Christopher W. Spalding was born March 15, 1814, in Rhode Island, of Scotch origin. His ancestors were prominent in the Revolutionary war.

Dr. Spalding received a common school education. In 1840 he removed from his native State to New York State. In the same year he began his professional studies, and received the degree of Doctor of Dental Surgery in 1851, and that of Doctor of Medicine in 1869.

In 1847-48, Dr. Spalding spent a year in Savannah, Ga. In 1849, he removed from Ithaca, N. Y., to St. Louis, where he resided for many years.

He took a leading part in the organization of the Western Dental Society, in 1851, and has been prominently identified with the American Dental Association, and of other State and City Dental Societies, and has been actively engaged in every good work which would tend to elevate the profession of his choice. He has been a Corresponding Member of the Illinois State Dental Society since 1880. He was also an ardent advocate of the homœopathic school of remedies, and was very successful in their administration.

In 1838 Dr. Spalding married Miss Cornelia Anna Erb, also of revolutionary stock. Of this union there is one son, Dr. John H. Spalding, who succeeded to his father's practice in St. Louis.

Dr. Spalding and wife, whose death preceded his over a year and a half, removed to Rhode Island in August, 1880, to spend their declining years in the State of their nativity.

In the death of Dr. Spalding, we have lost an earnest and faithful laborer in the healing art.

The foregoing sketch was kindly furnished to the Secretary by

H. J. McKellops,
Wm. N. Morrison, and
J. B. Newby.
} *Committee of the St. Louis Dental Society.*

# IN MEMORIAM.

Austin, J. F.
Baker, D. B.
Bushong E. W.
Call, E. B.
Davis, E. F.
Dean, M. S.
Eames, W. H.
Fitch, H. H.
Forbes, Isaiah.
George, Isaac.
Hand, M F.
Harrington, G. H.
Hawxhurst, D. C.
Hendel, J. W.
Henry, Charles.
Judd, Homer.
Keely, George W.
Kulp, W. O.
Lewis, C. W.
Lewis, H. N.
Morrison, A. M.
Park, Edgar.
Patrick, J. J. R.
Reynolds, J. S.
Rivers, C. W.
Sawyer, Charles K.
Sillimann, H. H.
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Spalding, C. W.
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